

the tubers, and is much aggravated by continuous heavy showers and high temperature in August and September. Hundreds of potato fields are totally destroyed by it, causing heavy loss to the cultivator. Brinjal plants sometimes suffer from a disease, called *tubi-marā* because it causes the leaves to become like the leaves of the *tubi* plant. Betel is subject to many diseases of a fungoid nature, some of which attack the leaves only and others the stalk and the whole plant. Of these, the *anqāri*, which causes the joints to turn black and rot, is especially injurious.

CHAPTER IX.

CANALS, DRAINAGE AND EMBANKMENTS

CANAL irrigation in this district is carried on from streams CANALS. which have been utilized for irrigation by letting water into them from the Eden Canal in the Burdwān district. This canal, ^{Eden Canal.} which is named after a former Lieutenant-Governor of Bengal, Sir Ashley Eden, who opened it in December 1881, takes off from the Dāmodar above Burdwān town and falls into the Kānā Nadi and Kānā Dāmodar at Jamālpur. From it the water of the Dāmodar is passed by means of weirs and sluices into several silted-up channels, such as the Kantul, Ghiā, Kānā (or Kuntī) and Kānā Dāmodar. The Eden Canal is classified as a work for which neither capital nor revenue accounts are kept, and was constructed in order to bring a supply of fresh water for sanitary purposes from the Dāmodar river into the natural channels and old river beds of the Burdwān and Hooghly districts; for those districts having been visited in 1861-62 by a severe and highly fatal epidemic of fever which was attributed to the stagnant and insanitary condition of the water-courses. In 1873 the first step towards the construction of the canal was taken by opening out the head of the Kānā Nadi, and in 1874 cuts were made connecting this channel with the Kānā Dāmodar and Saraswati. The work was carried out piecemeal, and the complete scheme consisted of (1) a head sluice at Jujuti, admitting the water of the Dāmodar to the Bānkā Nullah; (2) a weir in the Bānkā Nullah at Kānchannagar, with a head sluice admitting the water to the Eden Canal, which, after a course of about 20 miles roughly parallel to the Dāmodar river, delivered the water into the Kānā Dāmodar and Kānā Nadi at Jamālpur, and (3) various subsidiary works. There are also a cut connecting the Kānā Nadi with the Saraswati near Gopālnagar, with the necessary regulating works, and two distributaries, which were constructed about the year 1896.

The scheme was designed as a work of sanitary improvement, and not as an irrigation project; but the practice of irrigating from the canal sprang up very soon after

the canal was opened. In 1882 a great demand for water arose and 20,000 acres of rice were irrigated by flow from the canal, while in the two following years the acreage rose to 40,000 and 70,000 acres respectively. So far, no water-rates had been charged, but it had by this time become evident that a system of irrigation on this scale could not be carried on without involving Government in great expense on account of silt-clearing, management, distribution and other details of maintenance and construction. Irrigation was effected from the system of natural channels and *nadis*, as well as from the canal itself, and the rights of Government in the beds of these channels were not established. A lengthy discussion ensued as to how expenses were to be recouped. It was proposed that the zemindars interested should subscribe, but they failed to agree. In 1886 definite proposals were made by the Commissioner for the entertainment of a small special revenue establishment and the levying of a water-rate at 4 annas a *bighā* (i.e., $12\frac{1}{16}$ th annas per acre). Water was to be supplied on agreements: but as agreements for a sufficient acreage (about 53,000 acres) were not received, the matter still remained unsettled, though some water was supplied.

While the course to be adopted was still under discussion, a tentative system was introduced by the Executive Engineer and his subordinates, under which water was supplied under private agreements, entered into with representatives of the villages, on the condition that a number of continuous villages submitted applications for water, stating the area to be irrigated and paying the water-rates in advance, excess areas irrigated being paid for subsequently. The scheme succeeded and developed into the present system of irrigation. Water-rate rules under the provisions of the Irrigation Act were issued in 1893, and revised rules appeared in 1898. Under these rules provision is made for the supply of water on the long-lease system, season leases being also allowed and other areas supplied by single waterings. The system of advance payments, except for *rabi* and single waterings, has disappeared.

The annual receipts averaged Rs. 26,594 in the three years 1902-03 to 1904-05, and Rs. 23,385 in the three following years 1905-06 to 1907-08; while the annual expenditure averaged Rs. 39,359 and Rs. 32,394, respectively, thus resulting in a deficit. The area irrigated averaged 27,535 acres in the first triennium, and 22,854 acres in the second (1905-06 to 1907-8). The decrease is due to intentional restriction of the irrigated area on account of the uncertainty of the supply

from the head sluice at Jujuti: a scheme is under consideration for the increase of the supply by the construction of a weir across the Dāmodar river.

Apart from its utility for irrigation, this work has proved beneficial, from a sanitary point of view, to the villages on the banks of the channels which it flushes, as it ensures a supply of fresh water from the running stream of the Dāmodar.

In December 1894 the District Board submitted a scheme for the canalization of another dead river, the Kausiki, 18½ miles long, and asked Government for a contribution of half the cost. The Government expressed its willingness to undertake the work on payment of half the cost, but, the estimate having been raised to Rs. 72,000, the Board gave up the proposal. The scheme was revived on the application of the late Babu Bāmācharan Bhar of Haripāl, a wealthy Calcutta merchant, who generously offered a contribution of Rs. 30,000, and subsequently raised his offer to Rs. 35,000. The project has recently been sanctioned by Government, the estimated cost being Rs. 60,259, and the work is under construction. The District Board has contributed Rs. 8,500 towards the cost, and the balance is to be paid by Government. Schemes for canalizing other silted-up channels are also being considered.

The only drainage works lying entirely in the district are those designed for the drainage of the Dankuni marshes. These marshes, which are about 12 miles long from north to south, are situated in the Serampore subdivision. They consist of a chain or series of *jhils*, i.e., swamps wholly or partially covered with water, which lie between the Hooghly and Saraswati rivers. The total area of land between these rivers is about 70 square miles, of which 8 square miles drain direct into the Hooghly, while 62 square miles form a basin, in the central part of which are the Dankuni *jhils* occupying an area of 27 square miles. This latter area was not only a reservoir for the rainfall which falls over the 62 square miles, but the lowest part was nine feet below high-water level during the rainy season; and prior to its being drained, when the Hooghly was in flood, the tides flowed through the Baidyabāti and Ba'ly Khals and raised the level of water in the *jhils* to 15 feet in the month of August, the beds of the *jhils* being about seven feet above mean sea-level. The area of cultivated land varied with the seasons, the minimum being 10½ square miles and the maximum 27 square miles, but a part of this doubtful zone was irregularly cultivated with cold weather crops.

The ravages of Buidwān fever having drawn attention to the unhealthy state of the district, Mr. Adley, c.z., was deputed by

Canaliza-
tion of the
Kausiki.

DRAIN-
AGE.

Dankuni
drainage
works.

Government in 1869 to report whether want of drainage had caused or intensified the prevailing fever, and if so, how it could be rectified. Mr. Adley submitted two reports to Government, dated the 25th June and 10th September 1869, and the principal conclusions he came to were the following:—(1) that the district stood in much need of drainage; (2) that this in a great measure represented the cause of the fever scourge; (3) that the rivers and *khāls* had seriously silted up and deteriorated; (4) that, from an engineering point of view, there was no difficulty about the drainage question; and (5) that if properly conducted, the measures ought to be largely remunerative. Mr. Adley recommended the reclamation of the Dānkuni, Kātlā and Rājāpur swamps; the deepening of the *khāls* and improvement of their embouchures; the re-opening of the Kānā Nadi: the adoption throughout the district of 'high and low level drains, to serve the treble purpose of drainage, irrigation and navigation;' and the introduction of general sanitary measures. A portion of Mr. Adley's scheme—that for draining the Dānkuni marsh—was approved of by Government, and in 1871 the Drainage Act (V of 1871) was passed, under which Commissioners were appointed to carry out the work of draining the Dānkuni *phik*. The works were commenced in January 1873, and were completed in the same year.

They consist of:—(1) drainage channels, 16½ miles long, excavated through the lowest ground in the middle of the *phiks* and leading to the Baidyabāti Khāl on the north and the Bally Khāl on the south; these two *khāls* have also been partially straightened, widened and deepened; (2) two self-acting sluices, one in each *khāl*, with three openings and double gates; and (3) an iron-girdered two-spanned bridge over the Serampore-Chanditala crossing. The total cost amounted to Rs. 3,97,395, which, with maintenance charges capitalized, have been recovered from the persons interested. The works proved a great success from the first, all the available waste land being brought under cultivation within two years, while the annual report of the Sanitary Commissioner for 1874 stated that a large tract of country, which was formerly the centre of much disease and mortality, had become healthy owing to their completion. At present the annual charges for repairs do not usually exceed Rs. 2,000; but in 1903-04 they went up to Rs. 7,170, while in 1906-07 they fell to Rs. 258.

Rājāpur
drainage
works.

Colonel Haig, who was deputed to make an engineering survey of the district, proposed in 1873 to extend the Dānkuni scheme to other tracts in the south and submitted three drainage schemes, known as the Howrah, Rājāpur and Amtā

schemes. The Howrah and Amtā schemes concern the Howrah district only, while the Rājāpur drainage works drain the southern extremity of Kristanagar thāna in the Serampore subdivision, but lie for the most part in the Howrah district. These works were constructed under the revised Drainage Act VI of 1880, under the provisions of which a small drainage channel west of Rāmpur was also constructed in 1907-08 at a cost of Rs. 3,947.

The Sanitary Drainage Act VIII of 1895 is in force in the district, but has not yet been utilized. It has been proposed recently to canalize part of the Kunti river under this Act, but no final action has yet been taken in the matter.

In a riparian district such as Hooghly, embankments are of **EMBANK-
MENTS.** exceptional importance. The river Hooghly is not embanked on the west side, as its bank is sufficiently high and the towns are fairly well protected, but along the other rivers there are a number of public embankments, generally under the charge of the Government. In 1907-1908 Government maintained 164 miles, 3,365 feet of B class embankments at its own expense and 6 miles of D class embankments at the expense of the persons benefited. The total cost of repairing the former amounted to Rs. 34,328, and the repairs of the latter cost Rs. 5,053.

On the left bank of the Dwārakeswar and its branch the Sankarā, there is a continuous line (No. 6), 5 miles 250 feet long; and on the right bank of the Dwārakeswar and its other branch the Jhumi, there is another continuous line (No. 7), 6 miles 3,200 feet in length. Besides these, there is a circuit embankment (No. 20), 13 miles 5,108 feet long, beginning at the inner point of bifurcation of the Sankarā and Jhumi, going round on the inner circuit and terminating again in that point. The aggregate length of the three Dwārakeswar embankments is thus 80 miles 3,278 feet.

The river Dāmodar has a continuous line of high embankments on the left bank, 106 miles 1,114 feet long (No. 32), of which 41 miles 3,494 feet are in the Hooghly district. It has also on the right bank, six detached embankments with a total length of 47 miles 2,000 feet, of which 12 miles 4,250 feet are in the Hooghly district (Nos. 36 and 37). The left embankment of the Dāmodar being continuous for more than one hundred miles, has been provided with many sluices to allow for irrigation and the outflow of inland drainage. Among these sluices may be mentioned that at Kamarul, constructed in 1683-84 at a cost of Rs. 5,451; a channel inside the sluice was excavated in 1889-90 at a cost of Rs. 4,659.

The Kānā Nadi, the Kānā Dāmodar, the Saraswatī and the Būpnārāyan (left bank), have samindāri embankments at various

places. To prevent parts of Amtā and Kristanagar thānas being flooded at times of heavy rainfall, the zamindāri *bāndhs* on the left bank of the Madārīā Khāl are being remodelled for six miles from Dilakhās to Penro (in the Howrah district), at a cost of Rs. 30,000. The zamindāri *bāndhs* are, as a rule, in a state of disrepair.

History of the embankments. The necessity for embankments in this district has long been recognized, and they date back to a period anterior to British rule. It was, in fact, considered to be a duty of the zamindārs "to secure their lands from inundation by repairing the embankments." The cost of repairing the *bāndhs* was known as *pulbandi* and was realized by the zamindārs from the tenants concerned. When the British took over the ceded districts, numerous embankments were in existence in Hooghly, the most important being within the Burdwan Rāj estate, which owned those along the Dāmodar, those on the Dwārakeswar and the Silui, and those on the Ajai river. In 1178 B.S. (1771-72 A.D.), the year after the great famine, the total *pulbandi* charges of the Rāj were assessed at Rs. 50,000. The Rājā having fallen into arrears in the payment of land revenue, the Government took charge of the estate for several years, and entered into a contract with a Mr. Fraser for the repair of the embankments. The contract expired in 1783, and the Government then decided to make a settlement with the Rājā, "as being more agreeable to the zamindari constitution," and assessed the *pulbandi* charges at Rs. 60,000. This assessment was confirmed at the decennial and permanent settlements and was deducted from the Rājā's total land revenue. The Rājā occasionally entered into contracts with Europeans for the execution of the necessary repairs, e.g., with Mr. Marriot in 1800. The appointment of the latter was at first questioned by the Board, which subsequently allowed advances to be made to him.

The upkeep of the embankments under this system appears to have been inefficient, and the admonitions of the Board of Revenue were not infrequently conveyed to the Rājā through the Collector. At length, their neglected state necessitated the formation of a special committee to take care of them: in December 1803 and March 1804, we find the Rājā complaining of its requisitions. As a further measure for their improvement, Regulation VI was passed in 1806. When the Rājā's estates of Mandalghāt (Howrah) and Chitwā (Ghatal, Midnapore) were sold, his assessment was reduced to sicca Rs. 53,742. At length, wearied with annual demands for repairs (the cost of which now and then exceeded the amount assessed), the Rājā engaged in

1826 to pay that sum as revenue on condition that Government took over and maintained the embankments.

As late as 1833, there was no reliable record distinguishing Government from the zamindāri *bāndhs*; and in May 1835, the Superintendent of Embankments remarked that, owing to the gradual disrepair and decay of the latter, every successive flood did more and more damage. He gave the following list of the various kinds of embankments:—(1) *Gangurā*, river embankments; (2) *Sahad* or *pargana*, boundary embankments; (3) *Grām-bheri*, village boundary embankments; (4) *Fāri*, second embankments; (5) *Hāsirāb*, creek embankments; (6) *Khāl*, cross embankments in creeks and *nullahs*; (7) *Jal-nikāsi*, drainage embankments; (8) Masonry sluices; (9) *Bols* or wooden sluices. In 1836, the embankment question was taken up in earnest by the Government. The Superintendent was ordered to examine the records of the Collector's office and ascertain, if possible, the respective responsibility of Government and of the zamindārs and a committee was ordered to meet at Hijili and Tamluk in the cold season of 1837-38 to consider all points connected with the existing system. A marked improvement was observable by 1845, when no fewer than 89 masonry sluices had been constructed in lieu of the cuts formerly made by the ryots. In 1846 another committee was appointed to report on the whole subject of the embankments of the Bengal rivers; and this committee made the drastic recommendation that all existing *bāndhs* should be removed entirely and a system of drainage channels substituted.

In the meantime, the floods of the Dāmodar continued to play havoc with its banks, which between 1847 and 1854 were breached in numerous places nearly every year, *e.g.*, 25 breaches took place in 1847, 14 in 1849, 56 in 1850, 45 in 1852 and 28 in 1854. Large sums had to be spent in filling up these breaches and in repairing or strengthening the embankments, and the question of maintaining them was thus forced on the attention of Government. After a prolonged enquiry, it was decided to complete and strengthen the left embankment, and to remove the right embankments for 20 miles, retaining only such embankments as were situated at angles and curves of the river where the current bore directly upon the land. These orders were carried out before the flood season of 1859. After further enquiries which lasted several years, the Lieutenant-Governor in May 1863 expressed his opinion that the removal of the right embankment had been a judicious measure, that whatever partial damage might have been sustained by the natural action of the river, was not to be

compared with the injury and devastation formerly produced by the sudden and violent irruption of the river bursting its embankments, and that the general fertility of the area subject to inundation had been greatly increased. Since then, the Damodar, being unrestrained by embankments along its western bank, has made a large breach at Beguā in Burdwan, and has poured through it over the eastern half of thānas Arāmbāgh and Khānākul, causing immense damage to the winter crops. Government has lately decided to close this breach by a weir.

CHAPTER X.

RENTS, WAGES AND PRICES.

CASH rents are paid for practically all the land under cultivation RENTS. in Hooghly, but rents in kind are paid for leases of gardens and fishery rights, and also occasionally for lands newly brought under cultivation and for *char* lands. The system called *bhāg* or *sanjā*, by which tenants pay a portion of the produce of their rice lands as rent, is almost unknown. Tenants wishing to sublet their lands frequently demand produce rents, but the under-tenants rarely accept leases on such terms. The general level of cash rents is high owing to the keen competition for land and the value of the land itself, the cultivators getting good prices for their produce and thus being able to hold out for a high rent for their unoccupied lands. Detailed statistics of rent rates are not available, as there has been no general settlement since the Permanent Settlement of 1793. The following figures, which are abstracted from Collectors' reports, though not applicable to the whole district, may, however, be quoted for the purposes of comparison.

YEAR.	Sālī CLASS.			Sunā CLASS.			Sugar-cane.
	I	II	III	I	II	III	
	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs. A.	Rs.
1798 ...	3 0	2 4	1 8	3 0	2 4	1 8	...
1837 ...	2 0	1 12	1 4	3 0	2 8	2 0	...
	to	to	to		to	to	2 to 4
1850 ...	2 4	2 0	1 8	7 8	2 12	2 8	...
	7 8	6 0	4 8		6 0	4 8	...
1870 ...	12 0	9 0	6 0	12 0	9 0	6 12	12 to 14
				18 0			
	(Inferior.)			(Mulberry and tobacco.)			
1901 ...	10 8	5 4	to 6 12	Rs. 12	to	Rs. 30.	12 to 24
	to						
	18 0						

From the above table it will be apparent that there was no appreciable rise in rents for nearly half a century after the Permanent Settlement. The country was subject to floods; the means of communication had not been improved, and there was no great demand for more land on the part of cultivators. After 1837 came a period of prosperity. Roads and railways were opened; the land was protected against floods by continuous lines of embankments; a keen demand for land grew up; and, with the increase in the price of food-grains, the rates of rent began to rise. By the middle of the 19th century the rents of rice lands had been quadrupled, and the rents of lands bearing special crops had increased four to six times. A sudden check to agricultural progress was, however, caused by the virulent epidemics of Burdwan fever. Hundreds of villages were decimated or left with weak and emaciated cultivators. Local labour became scarce; and in the affected villages hundreds of acres of cultivable lands lay untilled. A better knowledge of the rent laws among the ryots also helped to prevent undue enhancements of rents, and the combined result was to hinder a rise in rentals. The people have now recovered from the effects of the Burdwan fever, and within the last 25 years the rise in the price of food-grains and of jute, and greater facilities for disposing of agricultural produce, have led to an increase of rent rates. The increase has been most noticeable in the case of jute lands owing to the growing demand for this fibre, and, to a smaller extent, in the case of other lands bearing special crops, such as potatoes, vegetables and tobacco. There has been no great increase in the rental of rice lands, and the rental of some inferior lands has even decreased.

WAGES.
Towns.

In the tract on the right bank of the Hooghly, from Bally to Tribeni, urban conditions prevail; and behind it lies a semi-urban area 3 to 8 miles in width. In these portions of the district the rates of wages differ from those common in the more rural thānas, the wages of men-servants being Rs. 3 to Rs. 5 a month, of maid-servants Rs. 2 to Rs. 3 and of cooks Rs. 6 to Rs. 7, besides food and clothing. Barbers usually charge one to two pice for shaving and two to four pice for hair-cutting; while a washerman's charge is Rs. 3 to Rs. 3-8 per hundred articles. The monthly wages of a syce or cooly average Rs. 7, of a common mason or carpenter Rs. 15, and of a common blacksmith Rs. 15 to Rs. 20.

Mofussil.

In the mofussil wages are naturally a little lower. Among agricultural labourers, *krishāns*, or permanent servants, get Re. 1-8 to Rs. 2-8 monthly, besides food and clothing; while

majurs or labourers employed temporarily during the weeding and reaping seasons get 4 to 5 annas a day, besides a light meal at midday. The wages of carpenters or blacksmiths are 20 to 25 per cent. less than in the towns. Thatchers get 5 to 6 annas per diem in addition to their midday meal; barbers charge a pice per head; washermen are few in number, the women generally washing the clothes of the family. Aboriginal field-labourers get less than local labourers, being paid a half to three-fourths of the usual rate. The payment of wages in kind, e.g., grain or vegetables, is disappearing and now survives only in out-of-the-way villages and in the Arāmbāgh subdivision. In rural tracts, however, watchmen are often paid in bundles of paddy for watching the crops.

The figures in the following table, which shows the daily wages entered in the accounts of an estate at Tārakeswar, are of interest as showing the rise which took place between 1845 and 1872.

YEAR.		Thatchers.	Carpenters and black- smiths.	Krishans or field-labourers (exclusive of food and clothing).	Reapers and other day- labourers
		As. P.	As. P.	As. P.	As. P.
1845	...	2 0	3 0	0 6	1 8
1854	...	2 6	3 6	0 7½	1 6
1859	...	3 0	4 0	0 10½	1 10½
1864	...	3 3	4 6	1 0	2 0
1869	...	£ 3	5 3	1 4	2 0
1872	...	6 6	6 6	1 4	2 6

The slack season for labour extends from April to the middle of June, when, the *rabi* crops being off the fields, very little labour is required except for ploughing or looking after sugarcane and *boro* paddy. In the towns too there is less demand for labour in mills, factories and other industrial concerns. During the rains sowing and weeding require a large labour force, but the real working season begins, towards their close, with the cutting and threshing of jute and the reaping of *aus* paddy. Work of all kinds is in full swing in the winter months (October-March). In the towns there is a constant demand for labour at this time, not only in the mills and factories, but also for brick-making, while in the rural tracts the reaping of the winter rice and *rabi* crops, as well as work in gardens and orchards, provides employment for the surplus labour available.

Supply of
labour.

Generally speaking, the indigenous day-labourers work in the fields, while the operatives in mills are mostly Oriyās or men from up-country. There is very little emigration, but immigrants are numerous, forming, indeed, a larger proportion of the population than in any regulation district of Bengal outside Howrah and the 24-Parganas. Maid-servants come from Bānkurā, cooks from Bānkurā, Midnapore and Orissa, servants from Bānkurā, Orissa and up-country, coolies from up-country and Orissa, agricultural and earth-work labourers from up-country, Chotā Nāgpur and the Santāl Parganas. There is a general complaint of the insufficiency of the supply of labour. During the winter months, the labour question often becomes acute, and instances have been known of crops rotting on the fields and looms stopping for want of workers. The difficulties caused by the deficiency of labour are further aggravated by epidemics of malarial fever that break out from November to February, reducing the number of workers and diminishing the working capacity of those who survive. This scarcity of labour is no new feature in the economic history of the district. Even in the early part of the 19th century labour could not be had for work on roads and embankments, except at exorbitant rates. The superintendents of those works were loud in their complaints on this score, and were somewhat indignant with the district authorities for not forcing people to work for them at their own rates.

PRICES.

Food-grains.

The main crop is *aman* or winter paddy, which is reaped and threshed from December to the middle of February; consequently, rice is cheapest in February. Then its price rises, slowly or rapidly according to the outturn of the harvest, the state of the market, etc., until the maximum is reached in the rainy months of July and August. With the harvesting of *aus* paddy, the price of rice falls, to rise again before the reaping of the *aman* crop, the rise being brisk if the *aman* harvest is expected to be bad, and slow if a good crop is expected. From November prices decline until the minimum is reached in February. Pulses, the chief *masi* crops, are harvested between January and March, and are consequently cheapest in February and March. Of these, *khesāri* (*Lathyrus sativus*) is the cheapest, but is little used except by the poorest classes. The pulse commonly consumed in this district, and, in fact, throughout the whole of the Burdwan Division, is *kalai* (*Phaseolus Roxburghii*), which being harvested in January, is cheapest in February. Wheat is grown on a small scale and is mostly imported. Its price, therefore, depends on the rates prevailing elsewhere; as a rule, it sells at a cheap rate in March and April.

The vegetables commonly consumed are potatoes, brinjals, plantains (unripe), and *patals*. Potatoes are gathered in February-March, and prices rule lowest in March. Brinjals are cheap throughout the winter months, and *kāñch kulās* (unripe plantains) in the rainy season, *patals* (*Trichosanthus dioica*) appear in the market in March, becoming cheaper and cheaper till June. Among fruits, mangoes are most popular owing to their quantity and wide distribution, and are eaten by all classes, both rich and poor. The season extends from the middle of April to the middle of June, the cheapest month being May. Of other articles, molasses and mustard oil are cheapest from February to April, though the price of the former is materially affected by imports from Java. The price of salt is generally uniform throughout the year; and so is that of *ghī* or clarified butter, but its price is often enhanced during marriage seasons, specially in the summer.

The table below will give a sufficient indication of the rise in the prices of food-grains and salt (the prices being shown in seers per rupee) during the period for which figures are available. Changes in prices.

Average of years.	Rice (Common).	Wheat	Gram.	Salt.
	Srs.	Srs.	Srs.	Srs.
1798-1813 (21 years) ...	46.00	50.50	50.50	...
1861-1866 (5 years) ...	21.00	21.4	22.7	10.60
1866-1870 (ditto) ...	20.84	21.86	17.14	9.32
1871-1875 (ditto) ...	16.94	14.64	18.71	8.73
1876-1880 (ditto) ...	14.40	13.89	15.43	9.00
1881-1885 (ditto) ...	16.59	15.57	18.37	12.43
1886-1890 (ditto) ...	14.86	13.95	17.16	10.78
1891-1895 (ditto) ...	11.86	12.95	15.08	10.59
1896-1900 (ditto) ...	10.95	10.97	12.59	9.97
1901-1905 (ditto) ...	9.98	10.84	12.64	12.16
1906-1907 (2 years) .	7.40	8.50	9.46	16.17

These figures show that during the last half century, prices have been enhanced threefold. If further proof be needed of the change which has taken place, it will be sufficient to mention that after the famine of 1866, in which the average price of rice for the year rose to 12.86 seers per rupee, the Collector reported that if the price of ordinary rice were to rise as high as 13 seers per rupee soon after the winter harvest, it should be considered as a warning of approaching famine; and in his opinion, Government relief operations would become necessary when the price of inferior rice rose beyond 12 seers a rupee. During 1906 and 1907, however, the average price of common rice was less than $7\frac{1}{2}$ seers per rupee, without any relief measures being deemed necessary.

There has been a similar rise in the price of other articles such as *ghi*, oil, fish, meat (goat), vegetables, and fruits, also cloths, kerosene oil, wood, bamboos, straw, brick and lime. There has been, however, a fall in the prices of salt, sugar and tea. The cheapening of salt is mainly due to changes in the duty levied by Government. In 1882 the rate of duty was reduced from Rs. 2-8 to Rs. 2, was raised again to Rs. 2-8 in 1888, but was again brought down to Rs. 2 in 1903. Since then the tax was reduced to Re. 1-8 in 1905 and to Re. 1 in 1907, which lowered the retail prices still further. The fall in the price of sugar is largely due to importation of foreign sugar and of Java molasses, and the cheapening of tea is attributed to over-production.

**MATERIAL
CONDI-
TION.**

The rural portion of the district has long been famous for its fertility. Towards the close of the 18th century the Burdwan zamindari within which it was then included, was described by Mr. (Sarishtadar) J. Grant as "the rich zamindari," "the enlarged, compact and fertile zamindari," "a garden in a desert, deemed wonderfully productive in the beginning of the present century," etc. These remarks were echoed by Mr. W. Hamilton, according to whom it had "thriven so prosperously, that in proportion to its dimensions, it may be reckoned the most productive territory in India."* After the lapse of a century, in spite of the ravages of fever and the damage caused by floods, the district continues to be one of the most prosperous in Bengal. The cultivators, who are mainly Kaibarttas, Sadgops and Sheikhs, rank among the best cultivators in Bengal, being hard-working, thrifty and fairly intelligent. Utilizing every bit of available land, sowing a wide diversity of crops, selling their produce with a shrewd knowledge of the current rates, they make the best of their resources. They further add to their income by working in the mills during the slack months, by catching fish, by raising fruit trees, vegetables and herbs on homestead lands, and so forth. Their women, too, assist by husking paddy and cleaning rice, by helping in fishing, etc.

The reports of the local officers confirm this impression of material well-being. As far back as 1848 the Magistrate remarked that during a tour in the district he had not met with a single patch of uncultivated land, and added that the number of brick buildings in every village, the comfortable appearance of the dwellings, and the many articles of foreign manufacture which the inhabitants possessed, were sufficient evidence of their

* *Description of Hindostan, 1820.*

being a prosperous and industrious race. Forty years later, (in 1888), after a special enquiry regarding the condition of the lower classes, the then Collector, Mr. Toynbee, remarked:—“The general result of the enquiries made is to show conclusively that in this district all classes of the peasantry eat twice a day and enjoy a full meal on each occasion. Here and there a poor widow or beggar may be found who does not always get two meals a day, but as a rule even they, the poorest of the poor, do so. No single instance of emaciation or disease due to want of food came to light during any of the enquiries. As regards clothing, the wants of the poorer classes are very limited and are sufficiently provided for. In the cold weather, no doubt, a little extra and warmer clothing would be acceptable, specially to their children, but as soon as the sun is up, they bask in its rays and are content. Few, if any, of the agricultural classes have any idea of thrift or of saving money for a rainy day, and they are most of them in debt to their *mahajan*; but this impecuniosity and indebtedness are due not to their poverty, but to their extravagance and imprudence. They spend far more on social and religious ceremonies than they can afford, and think little of a life-long debt so long as they can secure the gratification of the moment. Labour is abundant and wages are high, and if any man, woman or child does not get all material wants fully satisfied, it is their own fault.

“Perhaps the poorest class in the district is the weaver class, whose trade has suffered so severely from the competition of Manchester goods. Mr. Duke, the Subdivisional Officer of Serampore, says of them that they “eat twice a day pretty regularly, but in some cases with considerable difficulty.” The chief effect on them seems to be that they have to eat a coarser kind of rice than they used to eat and that they are more hopelessly indebted to their *mahajans* than before, in fact, they are “little more than half as well off as they used to be.” Many of them find work in the European jute mills in the Serampore subdivision, and there earn high wages, but the majority are too fond of their homes to leave them and seek employment elsewhere; they struggle on and exist, and are therewith content. The enquiries made in the jail by the Civil Surgeon support the general result of the local mofussil enquiries, the conclusion arrived at being that the physical condition of the artisan group was the worst, while the general health of cultivators and labourers appeared about equal.

“The condition of the poorer classes in this district, compared with that of the same classes in England, may unhesitatingly

be described as superior in every respect. There is no such thing as want or starvation among them and not one individual who does not know when he rises in the morning how or where he will procure food for the day. Their wants are few and easily satisfied; the climate in which they live and all their surroundings are enervating and to our view demoralizing; ambition they have none, beyond the immediate wants or wishes of the day; but, judged from their own point of view and by their own standard, they are prosperous and contented, and I doubt not that there are thousands upon thousands of the English poor who would gladly change places with them. I have not considered it necessary to give any figures in support of a conclusion which is so potent to every observer, and which has year by year impressed itself more and more on my mind since I came to the district nearly five years ago."

During a special enquiry about the prevalence of liquor-drinking in the districts of Hooghly and Howrah in 1888, Mr. Westmacott came to nearly the same conclusion. The twenty years which have since elapsed have produced little change, the Board of Revenue remarking in their Administration Report for 1907-08, that "in the districts of Hooghly, Howrah and other portions of Burdwan, the high wages earned in mills and factories, as well as the fertility of the soil and greater facilities for communication, enable the people to maintain a high standard of comfort." In one respect there has been an improvement. The recent movement in favour of country-made goods has given a stimulus to the weaving industry, so that the condition of the hitherto depressed class of weavers has improved.

Indebted-
ness.

It appears too that the indebtedness of the peasantry is not so great as elsewhere. Statistics of the mortgages or loans of cultivators are not available; but in addition to cultivation, they find so many avenues of employment, and are mostly so thrifty, that the percentage of indebted ryots is believed to be lower than in other districts of Bengal outside Howrah. Among the Kaibarttas and Sadgops loans and mortgages among fellow caste-men are common, but by this arrangement the payment of exorbitant interest is avoided, and reasonable time is allowed for the repayment of interest and capital. In other cases loans are taken from petty shopkeepers, but most tenants, thanks to the good prices they obtain for their produce and the transferability of their rights in land, get good credit from them. Landlords, too, generally avoid litigation with their tenants on account of the provisions of the Bengal Tenancy Act, VIII of 1885, which are well known to the principal

cultivators. Indeed, the landlords, who come from the middle classes and are more or less merely rent-receivers, borrow more and are comparatively more indebted than the *jeth-rायats*.

There is, however, a reverse side to this bright picture. As Colonel Crawford has remarked:—"If the district, as a whole, is rich and prosperous, it is a prosperity which is purchased with human lives. The inhabitants are essentially, like the conies, a feeble folk. The fat and fertile soil, which grows great crops of rice in abundance, is not the kind of country which breeds a race of strong men. . . . Fever is almost universal. The fertile rice lands grow not rice alone, but breed malaria with equal success . . . The death-rate is considerably higher than the birth-rate, and if it were not for the constant stream of immigration of a more sturly population from more healthy tracts elsewhere, the inhabitants would, in course of time, gradually die out."

CHAPTER XI.

OCCUPATIONS, INDUSTRIES AND TRADE.

OCCUPATION.

IN no district of Bengal except Howrah is the proportion of persons engaged in industrial occupations so large or of agriculturists so small. The statistics obtained at the census of 1901 show that 53·8 per cent. of the population are supported by agriculture, 20·3 per cent. by various industries, 3·8 per cent. by professions, and 2·5 per cent. by trade. Of the agriculturists, rent-payers aggregated 503,061, or more than 97 per cent., and the number of rent-receivers represented less than 3 per cent. Besides these, there were 48,794 agricultural labourers, of whom 24,504, or more than half, were actual workers, while of the rent-payers and rent-receivers, only 164,099, or less than one-third, were actual workers. The following are the numbers of actual workers among those engaged in the other principal occupations :—General labourers (46,934), fishermen and fish-dealers (13,072), rice pounders (12,194), cotton workers (11,961), jute mill operatives (10,932), servants (7,406), and priests (6,312). The proportion of actual female workers is generally somewhat small, but it is over 50 per cent. in the case of servants, rice pounders and vegetable sellers, nearly 50 per cent. in the case of fishermen, fish dealers and grain dealers, and more than 25 per cent. in the case of general labourers. The general prosperity of the community is indicated by the comparatively small number of mendicants (4,998) and their dependants (2,072).

Fishing.

Fishing is an occupation followed by a considerable number of members of the lower castes, especially Bāgdis, Kaibarttas (Jaliyā) and Tiyaṛs, for fish is always in demand. It is eaten by all classes, except Vaishnavas, widows of the higher classes, and a few others; and it is one of the few luxuries, if it can be called a luxury, that the cultivator allows himself and his family. Fish are plentiful in the winter months, when the local supply is supplemented by imports from the Hooghly estuary and the Padmā, from Bihār and Bhāgalpur. Hence, except on marriage

days, (called *lagansāh*), the price remains fairly uniform at this season of the year. The price is higher during the rains, when *halsā* are abundant, but most other fish are scarce on account of floods.

Various kinds of fishing implements are used, of which the chief are :—in rivers and large flowing streams, *māl jāl*, *kuri jāl*, and drag nets ; in sluggish streams, bamboo weirs and cast nets (*khayā jāl*) ; in tanks and ponds, cast nets and bamboo traps (*polu*). Special implements are used for catching *halsā*, *āra*, and mud-fish, such as *loi*, *māgur* and *sol*. Fishing with rod and line is popular, the best hooks being generally imported. Good hooks used to be made at Dhaniakhali, but the workmen appear to have died off.

Fresh fish is always preferred, but the lower classes eat fish, mostly of the smaller kinds, dried in the sun (*suthi*). Fish rearing is practised on a small scale. The impregnated eggs floating near the shallow edges of a river are collected and sold at the rate of Rs. 5 to Rs. 8 per *bāndi* or large pot. They are hatched in shallow ponds and the small fry, when sufficiently large, are caught, sorted and put in different tanks, or sold to hawkers, who carry them about for sale. Eggs and spawn are caught for this purpose in the Hooghly and Damodar, a task which gives the fishermen employment during the slack season.

During the period of Maghul rule, Satgaon, and, after its INDUSTRIES. decline, Hooghly, were the chief ports of West Bengal and contained numerous depots for the merchandise exported by Europeans and others. The goods were mostly brought in from the mofussil, but in course of time several industries grew up in the towns and their neighbourhood. Among the products of the mofussil may be mentioned oil, sugar and *ghi* (often called butter), which were produced in large quantities. Coarse hemp and gunnies are also specially mentioned as being exported from Hooghly in considerable quantities, and they therefore must have been produced in many neighbouring villages. Both in the mofussil and in the towns cotton-weaving and tussar-weaving flourished, Mr. W. Clavell in his *Account of the Trade of Hugly* specially noticing that “about Hugly there live many weavers who weave cotton cloth, and cotton and *Tessu* or *Herba* of several sorts”.* Raw silk and wrought silk were also exported from Hooghly ; but it is not clear whether they were the products of the district. It seems, however, certain that

* *Diary of W. Hedges, Esq.*, Vol. II, p. 239. Walter Clavell was Chief of Hooghly from 1672 to 1676 A. D.

in the 16th and 17th centuries it had several indigenous industries of importance, which were fostered and developed by the trade of the Europeans. According to Thomas Bowrey, the Portuguese resident in Hooghly town, though mostly very poor, were also employed in various handicrafts, such as knitting stockings of silk and cotton, baking bread, preparing sweetmeats from fruit, viz., mangoes, oranges, lemons, ginger, myrobalans, etc., and making pickles from mangoes, lemons, etc.* They also made a kind of cheese—an industry which has survived, for even now small quantities of cheese, called Bandel cheese, are made and sent to Calcutta.

During the first half of the 18th century European trade and the industries dependent on it flourished, for though the English East India Company had removed their head-quarters to Calcutta, their trade with this district did not fall off materially, while the trade of the French increased considerably. A check to this industrial development was caused by the inroads of the Marāthās and the wars waged from 1741 to 1757, but with the establishment of British supremacy after the battle of Plassey and the cession of Burdwan and Hooghly in 1760, a new era began.

During the early years of British rule (1760-1840), the principal industries and manufactures of the district were carried on either under direct European supervision, or with advances made by European capitalists. The East India Company themselves traded in cotton, silk and jute fabrics, besides sugar and indigo, and had factories or commercial residents in the mofussil for their manufacture and purchase. They endeavoured to retain a monopoly of this trade, and "interlopers", i.e., rival non-official Europeans, could not settle in the mofussil without the special permission of the Governor-General. These restrictions were gradually relaxed. In 1793 non-officials were allowed to trade in all articles except piece-goods and military and naval stores; in 1833 Parliament deprived the Company of all their commercial privileges; and by 1836 the commercial residencies of the Government were abolished, thus opening up the district to private enterprise.

In the district, as now constituted, commercial residents of the Company were stationed at Golāghor near Magrá and at Haripál in the Serampore subdivision, the factory having been moved there from Rājbalhāt about 1790. Each of the residencies had out-factories subordinate to it, the boundary between the

* *The Countries round the Bay of Bengal*, 1669-70, pp. 122-3.

two being the road passing from Nayásarai through Golāghor to Burdwān. The trade of Diwānganj on the Dwārakeswar appears to have been carried on by river with Ghātāl in the residency of Rādhānagar, which in 1795 was described as the port of the latter place, and of Khirpai and Chaadrakonā (both in the Ghātāl subdivision of Midnapore).^{*} Silk and cotton cloths appear to have been the chief articles of manufacture, but at Golāghor a trade in hemp and jute was carried on. Silk and cotton fabrics, to the annual value of ten lakhs, are said to have been manufactured under the patronage of the Company, but the trade gradually declined, and the post of resident was abolished about 1830, while the buildings and sites were sold off between 1830 and 1836. The main cause of the collapse in the cotton industry was the competition of Manchester goods, which, it was reported, could be sold at less than half the price of the cloths made at the Company's factory.

During this period non-official Europeans were mainly engaged in the manufacture of indigo, sugar and rum. Indigo appears to have been introduced into the district as early as 1780,—according to one account, by Mr. Prinsep—and the industry must have been well established by 1793, when some extensive indigo works were offered for sale at Rishra.[†] In 1795, Regulation XXIII was passed to settle the relations between the ryots, the indigo-planters and the Government. Towards the end of that century the cultivation of indigo gradually increased and a number of factories were started in the mofussil. The disputes and disturbances caused by the planters encroaching on each other's rights led Government in 1800 to pass orders that no European should establish a new indigo factory in the neighbourhood of an existing one: this rule was not withdrawn till 1830. The natives, moreover, were hostile to the industry, and assaults and riots were not infrequent. During 1822-42, indigo factories were in existence at Chanditalā, Bānsberīā, Hosnabad, Taldā, Durgāpur, Kalkapur, Meliā, Paigāchhi and Khanyān, the last being owned (in 1830) by a Bengali named Durpa Nārāyan Mukharji.

The manufacture of rum according to European methods was another industry of some importance. The earliest rum distillery of which there is record was built in 1810 at Bandel, in spite of the protests of the Prior, who expected that its establishment

^{*} *Selections from the Calcutta Gazette*, Vol. I, p. 41; *Toynbee's Administration of Hooghly*, pp. 91, 92; W. Hamilton's *Hindustan* (1820), Vol. I, p. 37.

[†] *Calcutta Gazette*, 21st February 1793, *Selections*, Vol. I, p. 550.

would lead to drunkenness and disorder. The business prospered for some years, the rum being not only supplied to the troops in India but also exported to Europe and Australia; and the sales in 1829 amounted to 61,028 gallons. Other distilleries sprung up at Ballabhpur, Paddamdāngā, Dhānguri, Rishrā, Konnagar, Baikipur and Chandernagore, but owing to the fall in the price of rum exported to Europe the industry became extinct about 1840.

The manufacture of chintz, which is said to have been introduced by Mr. Prinsep, was another industry which attracted European enterprise. In 1822 two factories existed, one at Rishrā and the other at Chāmpdāni, but eventually the industry succumbed to the competition of the cheaper Manchester goods. There was also a tobacco factory at Chinsura in 1836, which had been started by a Dutch firm. Among smaller industries may be mentioned the manufacture of paper at Serampore, Pānduā, Sātgaon and Bali Diwānganj, and the brick kilns along the bank of the river Hooghly. The paper of Pānduā was of such repute that the Magistrates of Sylhet and other districts frequently asked the Hooghly Magistrate for supplies of it. •

During the latter part of the 19th century the two most noticeable features in the industrial history of the district were the gradual decline of all the above-mentioned industries, except the manufacture of bricks, tiles and *sarki*, and the development of large industrial concerns, financed and managed by Europeans on European lines. Among the earliest of the latter were the Wellington Jute Mill at Rishrā and the Serampore Paper Mill. The latter, the first paper mill in India, produced the well-known bleached paper called Serampuri; but it was not very successful, and its business was transferred to the paper mill at Bally in the Howrah district, which was started by a company in 1874. In 1866 the India Jute Mill was opened at Serampore; in 1873 the Chāmpdāni Jute Mill started work; by 1888 the Victoria and Hastings Mills had been added to the number of jute mills, and all five employed over 11,000 hands daily when in full work. Other factories established before the close of the 19th century were a cotton mill at Serampore, bone mills at Uttarparā and Magrā, and the Victoria Chemical Works at Konnagar.

During the present century there has been a revival of indigenous industries, owing to the stimulus given by the *swadeshi* movement to the use of country-made goods. Cotton-weaving by means of hand looms has advanced distinctly, and the local weavers are earning fair incomes. Other handicrafts, such

as tussar-weaving, carpentry and the manufacture of bell-metal and brassware, have also benefited, though to a smaller extent. Another new feature is a growing inclination on the part of the Indian community to invest capital in manufacturing concerns managed chiefly, if not entirely, by Indians. The effect of this movement is seen in a cotton mill at Serampore, and in various brick kilns, *sarki* mills and oil mills.

All the large factories now at work in the district lie within the Serampore subdivision, on the west bank of the Hooghly river. They consist of six jute mills, one cotton mill, one bone mill and the chemical works at Konnagar.

All the jute mills are big concerns engaged in jute spinning and in jute weaving. Their size and importance will be apparent from the following table. There is also a jute mill at Gondalparā in French Chandernagore—

NAME.	Place.	Year of opening	NUMBER (IN 1908) OF—		Average daily number of operatives, 1908.	Outturn in 1907-08
			Looms	Spindles		
Chandpānī .	Chandpānī and Badysabari	1873	482	8,764	3,200	328,581 mds.
Dalhousie ...	Bhadrakwar	1905	432	9,030	2,800	12,410 tons.
Hastings ...	Risora	1875	759	10,580	5,822	699,249 mds.
India ..	Serampore	1864	700	9,056	3,267	455,465 ..
Victoria ..	Telmipata	1885	687	23,760	7,387	676,065 ..
Wellington .	Risra	1885	277	5,544	2,911	10,425 tons.

Only one cotton mill is at present at work, viz., the Bengal Lakshmi Cotton Mill at Mahesh, which took over a working concern, the Lakshmi Tulsi Cotton Mill. In 1908 this mill employed on the average 1,026 hands daily and had over 200 looms with 26,000 spindles, the outturn in 1907-08 being 31,617 maunds. The company was formed in 1906, and has a paid-up capital of 11½ lakhs. The mill has had four sets of proprietors within ten years, and is the only mill in Bengal which weaves *dhotis*. Another cotton mill, the Kallian, has been constructed at Mahesh and has recently started work. Both the mills are financed and managed chiefly by Indians.

Two other factories are the Ganges Valley Bone Mill at Uttarparā for crushing bones, and the Victoria Chemical Works at Konnagar for manufacturing acids, various salts, sulphates, manures, disinfectants and other chemicals. In 1908 they employed daily 303 and 108 hands, respectively, and in 1907-08 the outturn of the former was 13,315 tons and of the latter 980 tons. The Konnagar factory was formerly at Chitpur and has been established on its present site for 14 years.

Brick and
tile-
making.

Bricks are made along the west bank of the Hooghly river from Bānsberia to Bally, and also along the Bally Khāl, wherever suitable soil is found; tiles are also made in some of the brick-fields at Kotrang and other places. Numerous brick kilns use a patent kiln invented by Mr. Bull, and employ a large number of hands in the busy season, i.e., November to May. In 1907 there were 11 brick-fields, each employing 50 workmen or more, which were therefore classed as factories. There are also a large number of mills for pounding bricks into *sark*, in 1907 there were 31 such mills with 50 or more workmen each.

Small
industries.

Cotton weaving, after the cessation of the East India Company's commercial operations, languished in consequence of the competition of imported piece-goods. By the end of the 19th century, the latter had almost driven the products of the local looms out of the market; the trade in local yarns was extinct, and except in outlying tracts the manufacture of all but the finest cloths ceased. The number of persons engaged in cotton weaving decreased by about 33 per cent. in 20 years, and those who clung to their old handicraft had for the most part to supplement their earnings from other sources, such as agriculture, service, etc. In the towns, what little weaving there was owed its survival largely to the use of an improved hand-loom, known as the Serampore hand-loom, which was introduced from Chandernagore. Recently, however, in consequence of the *swadeshi* movement and the preference for country-made cloth which it inspired, the fortunes of the weavers have improved and they are now able to make a fair living. On this point the Magistrate reported in 1907:—"It appears that while formerly the weavers had to take advances from the middlemen and were always more or less indebted to the latter, they are now very much better off, and if anything, the middlemen are sometimes indebted to them. I was told the other day by the President of the Dwārkhātā Union that a young widow of the weaver caste, who would formerly have in all possibility suffered great privation, was now earning Rs. 16 or 17 a month and maintaining herself and her younger brother and sister in some comfort. In Dhaniakhālī I was told that a weaver earns about Rs. 20 a month, and the Subdivisional Officer of Serampore reported that a weaver there earns Rs. 25 a month. On the other hand, a large dealer in Dhaniakhālī was complaining that he was doing less business now than before, because now dealers from Chandernagore and elsewhere are coming to the villages, whereas formerly he and few others had a sort of monopoly." Under these circumstances, though the yarns are all mill-made, cotton-weaving continues to be the most important

of the small industries of Hooghly, and in 1906-07 the total value of the outturn in the Arāmbāgh subdivision alone (where the fly-shuttle loom is not used) is reported to have been Rs. 14,10,600.

Cotton cloths are woven in most large villages, but the chief centres are:—in the Sadar subdivision, Dhaniakhali Tantibazar and Khanyān; in the Serampore subdivision, Serampore, Haripāl, Dwarhātā, Kaikala, Jaynagar, Kharsarai, Antpore and Rājbalhāt; and in the Arāmbāgh subdivision Kālme, Khānākul, Kriśhtanagar and Māyapur, besides French Chandernagore. The weavers prepare *dhotis*, *sāris*, *chadars* and *gamchhās*, but fine cloths are made at Serampore, Haripāl, Dhaniakhali and Kālme, as well as in French Chandernagore. The cloths made in the first and last towns are specially known as Farasdanga.

The vitality of the industry in this district, and especially in Serampore, is attributed to the use of an improved hand-loom, which is simply the old English fly-shuttle loom invented by John Kay and introduced in Serampore from Chandernagore more than 50 years ago. The Serampore hand-loom. The chief difference between this loom and the ordinary country loom is that it contains a string and lever mechanism for pushing the shuttle backwards and forwards across alternate sheddings of the warp threads along the shuttle run; whereas in the country loom the shuttle is passed by the hands of the weaver between the threads of the warp. This is a distinct improvement on the ordinary hand-loom, in so far as it leads to a great deal of economy in labour. The improved loom works twice as fast as the ordinary country looms, for whereas, with the latter, a man can turn out $1\frac{1}{2}$ yards per day, with the improved loom he can finish $2\frac{1}{2}$ to 3 yards per day. The Serampore weavers have also adopted, in the formation of the warp, a simple labour-saving appliance by which 100 threads can be laid simultaneously instead of one or two. Instead of using only one bobbin and passing the thread backwards and forwards until the number of threads required for the width of cloth have been arranged, a bobbin frame is used containing a number of reels of thread, so that a full width or half a width of warp can be reeled off at once.

The fly-shuttle loom has now been adopted by many weavers in the Hooghly and Serampore subdivisions, and efforts to extend its use in other parts of Bengal have been made during the last 9 years, which are described as follows by Mr. J. G. Cumming:—“Mr. Havell, the Principal of the School of Art, Calcutta, took up the matter in 1901. From that time, by lectures, letters and advertisements, Mr. Havell did a great public service in his

efforts to extend the use of the Serampore fly-shuttle loom. Government circulated instructions and sketches; District Boards were importuned to send weavers for training at Serampore; a factory for the manufacture of Serampore looms was started at Chinsura, first under Ghosh. Chaudhri & Co., then under Ghosh, Palit & Co., then under Mr. P. N. De. The progress from year to year was summarized in the District Board reports, and Mr. Havell at one time was persuaded that 10,000 new looms were working, and in February 1908 was of the same opinion. An examination of the correspondence in many of the District Board offices discloses that there was too much amateur work; and recent enquiries show that the new form of loom, notwithstanding the impetus of the *swadeshi* movement, has not been sufficiently attractive to the working weaver. . . What has happened in Bengal is that in parts of Jessore district and most of the Howrah district, in the Sadar and Serampore subdivisions, but not in the Arambāgh subdivision of the Hooghly district, and in the Rāniganj side of the Burdwān district, the Serampore pattern of hand-loom has extended. But I believe that it was due more to inter-communication among the people themselves than to official efforts to popularize the Serampore fly shuttle loom."

Since these remarks were recorded Government has established (in 1909) a central school of weaving at Serampore in order to teach improved methods of weaving.

Silk
weaving.

The trade in silk fabrics was at first monopolized by the East India Company, but on their withdrawing from commercial operations, it passed into the hands of private European firms, and in particular of Messrs. Robert Watson & Co. It gradually declined owing to the fluctuating nature of the demand, the restriction in the mulberry-growing area caused by the Dāmodar floods, the degeneracy of the silk-worms and their dying off from disease. By the end of the century silk-weaving was confined to Serampore and to a few places round Bāli Diwānganj in the Arambāgh subdivision; while, even in the latter subdivision, a good many took up tassar reeling and weaving instead of working in pure silk. During the last few years the industry has revived to some extent as a result of the *swadeshi* movement. The weaving of pure silk from the mulberry cocoon is, however, practically confined to Serampore, where silk cloths and handkerchiefs are woven on a small scale. Silk thread is produced locally, mulberry trees being grown on the banks of the Dāmodar, Rupnārāyan and Dwāraakeswar. The silk is spun in some small filatures, but most of the cocoons are exported to the filatures at Ghātāl and elsewhere.

The weaving of tusser silk fabrics is an industry of some importance in the Arāmbāgh subdivision. The tusser cocoons are brought from Chota Nāgpur to Badanganj and sold, according to size, in three classes, viz., *dāba* (large), *bāgui* (medium) and *chādui* (small). The traders sell them retail to the weavers and others, whose women spin the threads. Thread is also brought from Sultānpur in Ghātāl, and from several villages in Arāmbāgh, e.g., Mānikhāt, Raipur and Salepur.

The weaving of the thread into cloth is carried on in the Goghāt thāna and especially in the villages included in the Badanganj outpost, which adjoins the Bishnupur subdivision of the Bānkurā district and the Ghātāl subdivision of Midnapore, two important centres of the tusser silk industry. The chief places at which it is carried on are Bāli Diwānganj, Syāmbazar, Badanganj, Kayāpāt, Kalāgāchia and Rādhāballābhpur. The fabrics produced are *sāris*, *dhotis*, *jors* (suits consisting of a *dhoti* and *chādar*), and dress-pieces made to order. They are sold either to local traders, who make advances to the weavers, or in the local markets, or are sent to the large *hāts* held at Rāmjibānpur in the Ghātāl subdivision and Rān.krishnapur in Howrah town. Cloths of a superior quality are called *chausuti*, i.e., of four threads, two in the warp and two in the weft, and those of an inferior quality *derhsuti*, i.e., having one and half threads. A coarse fabric, called *mukātā* or *kethe*, is prepared at Badanganj from the threads of pierced cocoons. These cloths, which are strong and cheap, are largely used by Oriyās and Mārwaris, and are exported to Orissa and Calcutta.

Fabrics of mixed silk, tusser and cotton, known as *rangma*, are made at Bāli Diwānganj, Udayrājpur and other villages in the Arāmbāgh subdivision, from which they are exported to the Punjab and United Provinces. This industry dates back to the days of Mughal rule. According to colour and size, the fabrics are divided into different classes, e.g., *swayaji* (red and white stripes on an orange ground), *m skha* (with black and orange stripes), *selaj-khata* (black stripes on orange ground), *phulāru* (red flowers on yellow or white ground), *jardā* or *rujasdi* (red and white stripes on a yellow ground), and *sushi* (in red and blue checks). The *phulāru* variety is used in the Punjab for head-dresses or waist-bands, and the other articles for making shirts, jackets or wraps for women, especially for wear during wedding ceremonies. The trade is in the hands of up-country merchants, who have local agents for the purchase of the cloth. Another fabric consisting of tusser and cotton, which is called *garbhanuti* (cotton-wombed), is sometimes made to order.

Rope-works.

Rope is made on a fairly large scale from jute and hemp. The rope works are generally situated in the large groves which fringe the East Indian Railway line between Chandernagore and Bally, at places such as Khalsini, Nabagrām, Chātrā, Sankarpur, Belculi and Uttarpārā. Gunny cloth is manufactured at Bālugḥāt.

Brass and bell-metal ware

The chief centres of the manufacture of brass and bell-metal ware are:—in the Sadar subdivision, Boinchi, Morārḥāt and Khāmārpārā within the Bansberīā Municipality and Gholsarā in thāna Polbā; in the Serampore subdivision, Junāi and Chāmpā-dāngā; and in the Arambagh subdivision, Bāli and Kumārganj in thāna Goghāt. The different kinds of brassware are:—in Bānsberīā, saucers (*rekābi*), bowls (*bognā*), jugs (*gādu*) and toys for children; in Gholsarā, water-pots (*lotās*); in Junāi fishing reels; in Chāmpādanga betel-boxes (*pāndāns*). Ordinary utensils are made in Bāli and Kumārganj, and bell-metal ware at Boinchi. Under this head reference may be made of the Newtonian telescopes of brass manufactured at Hooghly by Messrs. S. K. Dhur and Brothers.

Sugar manufacture.

A considerable amount of raw sugar is made in the villages from sugarcane. The juice, after being expressed, is boiled into a thick syrup called *gur*, which is sold locally and is not exported. The *gur* is put into baskets for being drained and refined by a weed named *ganj* (*Vallisneria spiralis*). The portion remaining within the basket, when dried, becomes crystallized and forms the raw sugar of commerce. If thoroughly drained and dried, the bleached sugar is called *dolo*, if imperfectly freed from molasses, *khār gur*. The liquid which is drained away is known as molasses (*gholā gur* or *māth gur*). The molasses are utilized for the distillation of country spirit or are used by the poor. The *dolo* and *khār gur* are exported for manufacture into refined sugar. For producing sweetmeats the local confectioners make a little refined sugar by boiling the coarse sugar and removing the impurities with the aid of some milk. Date juice is made into *gur* and refined into sugar, and the same is done with palm juice, the crystalline sugar (*michhri*) produced from it being highly esteemed for its medicinal value.

Paper-making.

A few Musalmāns make a little country paper at Niyālā and Mahānād near Pānduā, at Kolshā in thāna Polbā, and at Bāli Dīwānganj in thāna Goghāt. The manufacture is almost extinct owing to the cheapness and superior quality of mill-made paper, but the local paper still commands a sale, at the rate of Rs. 10 per 100 sheets, among Calcutta traders for use as account books.

Carpentry.

Chairs, desks and wooden boxes are made in considerable numbers by carpenters in French Chandernagore, and in Keotā and

Chinsura. Articles of ebony, chiefly hookah stems (*nalcās*), are manufactured at Kāmārpokhur, Sripur, Badanganj and Kayāpāt in the Goghāt thāna.

Chikan or "chicken" work (from the Persian *chikin*, i.e., ^{Chikan work.} art embroidery) is produced in some villages in thānas Dhaniākhālī (outpost Dādpur and Chanditalā, chiefly by Musalmān ladies. This is embroidery work, the pattern being first sketched out in paper and then worked in on the cloth. The work is popular with European ladies and is exported to Europe, America and Australia by Calcutta dealers. Some of the local people also go to America, South Africa and Australia to trade in *chikan* goods.

Good baskets are made at Mayāpur, Bandipur and Magiā, and ^{Miscellaneous.} serviceable mats and wickerwork articles at Serampore, Bandipur, Akri, Borai and in several villages of the Arambagh subdivision. Common pottery is made in every important village of the district; the best known articles are those made at Baidyabāti, Bhadreswar, Sugandhya and Chandernagore. Colour printing on cloth is carried on at Serampore, the handkerchiefs prepared by the printers being exported to Rangoon, Madras and Mauritius. Dyeing is also a prosperous industry at the same place. It is reported that the dyers use European aniline dyes.

The earliest trade centre in this district, so far as can be traced, ^{TRADE.} was Tribeni, which even during the period of Hindu rule was a flourishing place of pilgrimage. Under the early Musalmān rulers it was the head-quarters of the south west province of Bengal, until the seat of Government was removed 4 miles inland to Sātgaon, on the Siraswati. This transfer must have taken place before 729 H. (1328 A.D.), for a coin of Muhammad Bin Tughlak minted at Sātgaon in that year has been found. In course of time Sātgaon became an important entrepôt from which goods, both local and imported, were distributed over the country, partly by pack-bullocks but chiefly by boats. It is not clear whether the town had any sea-borne trade, but probably it had, for Tāmrālipti had ceased to be a port, and the Hooghly was deep enough for the coasting vessels of those days. After the middle of the 15th century the Portuguese began to trade with Bengal and were attracted by Sātgaon, or as they called it Porto Piqueno, i.e., the little port of the Ganges. This is clear from the remarks of the Portuguese historian De Barros (*circa* 1560 A.D.), who speaking of the Ganges wrote:—"Its first mouth, which is on the west, is called Satigan, from a city of that name situated on its streams, where our people carry on their mercantile transactions." During the century the trade of Sātgaon was at its zenith. The Bengali poem *Chandi* of Kavi-kankan (*circa* 1600)

bears testimony to its prosperity, and Cesare dei Federici, who visited the place about 1580, remarked:—"In the port of Satagan every yeere 1 de thirtie or thirtie-five ships great and small, with rice, cloth of bombast of diverse sortes, lacca, great abundance of sugar, mirabolans dried and preserved, long pepper, oyle of zerkeline, and many other sorts of merchandise. The citie of Satagan is a reasonable fair citie for a citie of the Moores, abounding with all things."

Outside Sâtgaôn trade was mostly carried on in *hâts* held once or twice a week, along the river bank. Federici described the system thus:—"I was in this kingdom four moneths, whereas many marchants did buy or freight boates for their benefites, and with these barkes, they goe up and downe the river of Ganges to faïres, buying their commoditie with a great advantage, because that every day in the weeke they have a faïre, now in one place and now in another: and I also hired a barke and went up and downe the river and did my businesse."*

Before the Mughal conquest of Bengal in 1575 A.D., the Portuguese had been allowed to settle at Hooghly, 4 miles south of Sâtgaôn, where they erected extensive godowns; and as the shipping was mostly in their hands, they succeeded in transferring the sea-borne trade to this town. Hooghly, wrote Ralph Fitch (1588), "is the place where the Portugals keep in the countrey of Bengala . . . and standeth a leagne from Satagan; they call it Porto Piqueno." The *Ain-i-Akbari* (completed in 1596-7 A.D.) notices that the *sac* duties from *bandar-ban* (port dues) and *mandati* (market dues) in *Sarkâr Sâtgaôn* amounted to 1,200,000 *dams* or Rs. 30,000, and states that Hooghly had become the chief port, though Europeans still carried on an import and export trade with Sâtgaôn.

During the first thirty years of the 17th century Sâtgaôn declined; and even the inland trade was mostly diverted to Hooghly. Occasional notices of Sâtgaôn and its commerce appear, however, in the letters received by the English East India Company from its servants in the East, *e.g.*, Mr. Samuel Bradshaw wrote in 1610:—"Nutmegs, Cloves and Maces sell exceeding well in Surratt, Musulapatan, Pipely, Satagan, Arracan and divers other places, so that no great quantity be thither carried." Sâtgaôn was also referred to several times by the English Agents in Patna in connection with its quilts. One letter says:—"I shall provide some quiltes of Sutgonge, wrought with yellowe silke, at reasonable rates;" and another letter refers to specimens of "Sutgonge" quilts bought at such reasonable rates. The

* Hakluyt's *Voyages*, etc., reprint, Vol. V, p. 411.

Portuguese trade with Sātgaon is also mentioned in a letter from Patna dated 6th August 1620 :—"There are latlye come up divers frigitts of Portingalls from Sutgonge, whose merchants buye up all they can laye hand of." In these references Sātgaon probably includes Hooghly.

The trade of Sātgaon was by this time of little value, and the place derived what importance it had from the Imperial custom-house being still located there. Hooghly is now repeatedly mentioned as the principal port of the Portuguese, under various names, e.g., Golin, Golin, Gollye. For example, in a letter of the Patna Agent to the English Company dated 30th November 1620, it is said :—"The Portingalls of late yeares have had a trade here in Puttana, cominge up with their frigitts from the bottom of Bengalla, where they have two porttes, the one called Gollye, and the other Pieppullye, and therein are licenced by the Kinge to inhabitt. Gollye is theire cheefest porte, where theye are in greate multitudes, and have yearlye shippinge both from Mallacka and Cochine." In fact, the export trade of the locality appears to have been almost entirely in the hands of the Portuguese, and this is implicitly admitted in several letters from the English Agents at Surat.

In 1632 Hooghly was besieged and captured by the army of the Bengal Nawāb, and though the Portuguese were soon after allowed to return, their power was irretrievably lost. Hooghly now became the seat of the local *faujdār* and the Imperial custom-house was located there. The Dutch, the English and, later on, the French, also settled in the place, so that in spite of the decline of the Portuguese power trade flourished. W. Clavell, the English Chief, in his account of the trade of Hooghly (1676), noticed that the Dutch exported rice, oil, butter, hemp, cordage, sail cloth, raw silk, silk fabrics, saltpetre, opium, turmeric, "neclaes" (indigo-dyed cloths), gingham, sugar, long pepper, bees-wax, etc. Besides cotton and tussar cloths, which were woven by weavers in the neighbourhood, silk, sugar, rice, wheat oil, butter, coarse hemp and gunies were brought in from the adjoining country. Saltpetre was also brought from Bihār and apparently refined at Hooghly. The articles required by the Company were obtained either by contract with the local merchants or by sending out "banians" (brokers) with passes authorizing them to convey their purchases free of custom. Passes for the goods sold to merchants in Hooghly were also issued to save the latter from having to pay transit dues.

In the first half of the 18th century the trade of the district continued to expand. The Dutch at Chinsura, the French at

Chandernagore, the Danes a little below it at Dinemardangā, the Ostend Company at Bānkibazar opposite to it, had considerable settlements, and though the English Company had removed their head-quarters to Calcutta, they had agents in Hooghly, where a great part of their purchases were made. The Imperial custom-house, moreover, was at Hooghly, so that both sea-borne and the internal trade had to pass through it, to pay customs duty or to get free passes. The amount thus levied may be realized from the fact that in 1728 *Sair Bakshbandar*, i.e., export and import dues on foreign merchandise, yielded Rs. 2,21,975 at the rate of $2\frac{1}{2}$ per cent. on the value of the goods, and, with the tolls on 9 *ganjes* or subordinate stations, realized Rs. 2,42,014 *succa* rupees.

Alexander Hamilton, who visited Hooghly early in the 18th century, has left an interesting description of its trade (1723). "The town of Hooghly drives a great trade, because all foreign goods are brought thither for Import, and all goods of the Product of Bengal are brought thither for exportation. And the Moghul's Furza or Custom House is at this place. It affords rich cargoes for fifty or sixty ships yearly, besides what is carried to neighbouring Countries in small vessels, and there are vessels that bring Saltpetre from Patna, above 50 yards long and five broad, and two and half a deep, and can carry above 200 tons. To mention all the particular species of goods that this rich country produces is far beyond my skill; but in our East India Company's sales, all the sorts that are sent hence to Europe may be found; but opium, long pepper and ginger are commodities that the trading shipping in India deals in, besides tobacco and many sorts of piece-goods, that are not merchautable in Europe."

Trade suffered greatly during the wars waged between 1740 and 1760, but revived with the cession of the district to the English in 1760. The trade of other European nations fell off, except during the long wars in Europe at the close of the 18th century and the beginning of the 19th century, when the British were only too glad to ship their goods in neutral vessels. On the whole, however, the volume of trade was diverted to Calcutta, the result being that the *sair* duties of Hooghly fell from Rs. 2,39,548 in 1757 to Rs. 62,644 only in 1783.

Throughout these years the East India Company held a monopoly of the sea-borne trade with India. No British subject, either abroad or at home, could engage in it, except with the express permission of the Company, while non-officials were debarred from internal trade by not being

allowed to reside in the mofussil without the special permission of the Governor-General. The only general exception to the rule was made in the case of the commanders and officers of the ships employed in the Company's service, who were allowed a certain proportion of tonnage freight free. The Company's European servants in Bengal also traded privately in the interior, either with the tacit permission of their superiors or clandestinely; but this was an infringement of the monopoly of the Company, which had factories or commercial residences for the manufacture or purchase of exportable goods, *e.g.*, at Golāghor (near Magrá and Haripál in this district).

In 1793, on the renewal of the Company's charter, private individuals were permitted to trade in all articles other than piece-goods and military or naval stores; and British residents in India were allowed to act for foreigners and to export annually a certain quantity of goods in the Company's ships. In consequence of this measure, the value of the Company's exports from Bengal fell from Rs. 1,14,00,151 in 1792-93 to Rs. 34,65,190 in 1805-06; while the value of goods exported from Bengal to London by private persons and by the Company's commanders and officers increased from Rs. 84,08,800 in 1795 to Rs. 1,31,97,400 in 1801. The articles usually exported on behalf of the Company were piece-goods, raw silk, saltpetre, sugar, opium, hemp and, occasionally, indigo.

As the Company's administrative work increased with the expansion of their territory, they withdrew more and more from trade. Public opinion in England also pronounced strongly against the Company's dual position as Governors and traders. By the Act of 1833, renewing their charter for 20 years, Parliament deprived it of all its commercial privileges, and by 1836 the commercial residencies and *aurungs* or factories were abolished, leaving private trade and industry free from any rivalry on the part of the Company. In 1827 the post of Customs Collector at Hooghly was abolished, his duties being amalgamated with those of the Collector of Land Revenue; and in 1837 the customs duties were abolished. Figures given by the Collectors of Hooghly for the district trade between 1819 and 1833 show a gradual increase in its value from Rs. 39,99,796 in 1819 to Rs. 69,41,490 in 1833, the exports always largely exceeding the imports and being on the average five to six times as great. During the next sixty years (1840-1900) the trade of Hooghly grew steadily. In the first twenty-five years its growth was rapid owing to the opening of the East Indian Railway, the improvement of roads and waterways, and, in a minor degree, the establishment of steamer services along

the Hooghly. In the next thirty-five years the increase was slow, for the people suffered terribly from Burdwan fever.

At the present time the trade of the district is almost entirely with Calcutta and Howrah, the principal entrepôts being connected with those places by road or river. The chief exports are: - rice and paddy from the Arāmbagh subdivision and fine rice from the other two subdivisions; pulses, vegetables and fruits, sold at Sheorāphuli and Bhadreswar; cotton cloths from the Serampore mills, and hand-loom cloths, specially those called Farāsdānga; jute, ropes and gunny-bags from the mills of the Serampore subdivision; bricks and tiles from the brickfields along the Hooghly; tusser cloths from Bālī Diwāganj; brassware from Bansheria; and fine sand quarried from the Saraswati near Magra. The principal imports are rice, wheat, *ghī*, salt, tobacco, spices, jute, piece-goods, kerosene oil, coal, timber and lime. The crops of common rice and wheat raised in the Sadar and Serampore subdivisions being insufficient for local consumption, those grains have to be imported from Calcutta, Bihār and the neighbouring districts. Salt is brought from the *golās* at Salkhiā, kerosene oil from Budge-Budge, jute from Eastern Bengal, *ghī* from up-country or Calcutta, English piece goods, yarns and spices from Calcutta, coal from Burdwan and Manbhūm, and lime from Burdwan and Sylhet. No reliable statistics of imports and exports are available, but the general impression is that the exports largely exceed the imports, thus leaving a balance of trade in favour of the district.

Hats and melās.

All the riparian towns have bazars or daily markets for the sale of goods, and so have many of the largest villages, *e.g.*, Magraganj, Guptipārā and Boinchi in the Sadar subdivision, and Bhadreswar, Haripāl and Tārakeswar in the Serampore subdivision. *Hats*, *i.e.*, periodical markets held once or twice in the week, are, however, still common. Of these, the most important are Mallik Kāsim's *hat* at Hooghly and those at Mahānād and Rājhat in Polbā thāna; at Pānduā, Dhaniakhālī and Sheorāphuli in the Serampore thāna; at Singur, Chanditalā and Siakhala in Chanditalā thāna; at Rājbalhāt in Kristanagar thāna; at Krishnagar and Bandar in Khānakul thāna; at Arāmbāgh and at Bālī Diwāganj in Gogūāt thāna. Bhadreswar and Sheorāphuli are the chief marts for fruits, vegetables and fish; Mallik Kāsim's *hat*, Magraganj and Diwāganj for rice and paddy; Dhaniakhālī, Serampore, Rājbalhāt and Bālī Diwāganj for cloths, and Bālī for tusser fabrics. Considerable sales also take place at religious festivals (*melās*), of which the largest and the most important

are those held at Māhesh (Serampore) during the car festival, at Tārakeswar during the Sivarātri and Cherak festivals, and at Tribeni during the Uttarāyana and Bāruni festivals. Pānduā also attracts a considerable number of Musalmān pilgrims in the months of January and April.

CHAPTER XII.

MEANS OF COMMUNICATION.

ROADS. THE first map showing roads in the tract of country of which
Old roads. this district forms part is that of Valentyn, which was based on data collected by the Dutch Governor Van den Broucke (1658-64). Two roads are entered on his map—one, a Pādīshāhi or royal road, extending through Burdwan to Midnapore, and the other, a smaller road, which starting from Burdwan, passed through Salimābād and Dhaniākhālī to Hooghly. The former was an important military route, being used by troops in the rebellion of 1696, in the march of Shujā-ud-dīn to Murshidābād and in the wars of Ali Vardi Khān. With these two exceptions, the district, when ceded to the British in 1765, had no road worthy of the name, but only fair-weather tracks hardly passable in the rains. Bridges were few and far between, and those that existed owed their origin to the generosity and public spirit of some wealthy individual rather than to the Mughal Government. During the next twenty years these tracks were repaired and widened, though roughly and irregularly. From Rennell's Atlas, plate VII (1779), it appears that the most important roads were those connecting Sālkhiā (Howrah) with various places in the interior. One, running northwards along the west bank of the Hooghly to Ambuā near Kālā, passed through bally, Alinagar, Serampore, Ghiretti, Chandernagore, Chinsura, Hooghly, Bandel, Bānsberīā, Trebenī, Nayāsarāi, Dirga and Inchurā. A second road passed north-west through Chanditalā and Dhaniākhālī, to Salimābād in the Burdwan district: while a third went west and then north-west through Kristonagar and Kājbalhāt to Diwāngauj. Between these main roads lay numerous cross-roads connecting the more important villages, more than a dozen such cross-roads being entered in plates VII and XIX. None of the roads appear to have been metalled.

In May 1830 the following were reported as the principal roads in the district (1) Bālī to Kālā *via* Inchurā, (2) the Grand Trunk Road from Hooghly to the north of India *via* Burdwan (3), the Old Benares road, (4) Ghiretti to Dwarhātā, (5) Burdwan to

Midnapore *via* Koerganj, (6) Ellipur *via* Singur to Hooghly, and (7) Hooghly to Bhāstārā *via* Polbā. The Magistrate reported that these roads were constructed by Government many years before for commercial and military purposes. It is clear that, having made the roads, the Government of the day paid little attention to their maintenance, in spite of numerous complaints. In 1796, for example, the Court of Circuit called the attention of the Governor-General to their wretched state and to the encroachments of zamindārs and cultivators on the road-way. In 1815 a similar representation was made to Government by the Superintendent of Police, L. P.; and in February 1830, after an extensive tour through the district, the Magistrate of Hooghly reported that with the exception of the old Benares and Grand Trunk Roads, he "encountered nothing deserving the name of a road. Thoroughfares are everywhere frequently entirely obliterated, and I have made my way in succession to several villages over no better path than a ridge through intervening paddy fields." The military authorities were loud in their complaints, the justice of which was admitted by the Magistrate, who in 1837 wrote that he could do nothing without funds. "I am sorry to say that, with the exception of the great lines of communication which are kept up by Government, and which, by the way, are frequently in a wretched state, no provision whatever exists for making or repairing roads or bridges in the interior of the district. There is not a single road in the district which a European vehicle could traverse, while the number passable for hackeries in the rains are lamentably few."

Of the roads mentioned in the list of 1830, the Bālī-Inchurā road was the old Murshidābād road, and the Burdwan-Midnapore road was the old Pādshahi road, both shown in Rennell's Atlas. The Old Benares Road was a later addition, being constructed by Government as the most direct route to the Upper Provinces. The work was under the charge of Captain Rankin, who had to face a number of difficulties, *e.g.*, we find him complaining in 1782 of obstruction by the Rāmgarh zamindār and of damage done by ryots, and asking for an order on the "renter" of Burdwan for Rs. 10,000 and for *purwānas* on the zamindārs of Pānchet, Bishnupur, Burdwan and Hooghly to supply him with coolies; this request was granted by the Board of Revenue.* He was in charge at least up to 1797, for in January of that year there is mention of his being very angry with the Darogā of Haripāl for not getting him coolies. Lieutenant (afterwards

* Bengal Manuscript Records, Vol. I, Letters 115-16, 834, 840-1, 873, 933.

Major) W. D. Playfair, who was in charge from 1816 to 1828, put down mile-stones and divided the road into 7 or 8 sections, each under a road *sarkār*. The road was then 14 feet wide, but the Military Board recommended that it should be widened to 20 feet. In 1828 the road was made over to the Magistrate, and two years later the then Magistrate, Mr. (afterwards Sir) Frederick Halliday, reported to Government the extent to which it had suffered from floods, especially that part of it west of the Dāmodar. By 1840 the troops had ceased to use the road, and it had, at least in the flooded parts, become no better than a fair-weather track. Even three years before this only 32 out of 58 bridges were standing, and their arches were being fast worn away. The dak bungalows were out of repair, and the furniture in them was being stolen piece by piece or going to decay.

Grand
Trunk
Road.

The road now known as the Grand Trunk Road is that running from Howrah to Burdwan *via* Hooghly, but in the forties and fifties of the last century the name was applied to the road from Calcutta to Burdwan *via* Hooghly town, which crossed the Bhāgirathi at Paltā Ghat. Still earlier, only the portion which branched north-west from Hooghly to Burdwan was called by this name. Hooghly town was, in fact, a junction, from which one great route ran north-west to Benares, while another road ran north to Kālnā and then to Nadiā and Murshidabad along the Ganges.

The history of the present road begins in the early years of the 19th century. In 1804, the river having encroached upon the portion between Serampore and Chandernagore, Mr. R. Blechynden was appointed to survey a new alignment with 500 convicts under an European sergeant. In 1820 the part of the road north-west of Hooghly was described as "very indifferent, and in some places next to impassable, specially west of Pandua." Its reconstruction was taken in hand several years later; and in 1829 the "new road" was first used by troops in preference to the old Benares road. The Rājā of Burdwan in that year gave Rs. 36,000 for the construction of a bridge across the Kuntīā Nullah at Magrā; in the following year the road was metalled between Hooghly and Magrā; and by 1836 it had been extended beyond Burdwan. The work is said to have cost fifty lakhs, and is one of the monuments of Lord William Bentinck, who, it is said, was nicknamed William the Conqueror because parts of the road were metalled with *kankar* !.

Murshidabad
road.

The older road to Murshidabad *via* Inchurā and Kālnā was also much used by troops and travellers going to Nadiā, Murshidabad and Monghyr. It was apparently unbridged at first, but

in 1828 Prān Krishna Hāldār, zamindār of Jagdispur, gave Rs 13,000 for a *pucca* bridge over the Saraswati at Tribenī. Prān Krishna Hāldār was rewarded for his liberality by the Governor-General allowing him to post 6 sepoyas as sentries, at the gates of his house. A suspension bridge was also constructed at Nayāsarai from money raised by public subscriptions; but both bridges were swept away by a flood in August 1834, and it was not till 1839 that the Court of Directors permitted the surplus of the Ferry Fund to be expended in reconstructing them.

Regarding the road from Hooghly to Dhaniākhali, Dhaniā-
khali road. Mr. Toynbee writes:—"A very special interest attaches to this road, as it was mainly constructed by funds raised by public subscription, and because in the supervision of the expenditure of those funds by a committee of Indian gentlemen we have the germ of the Road Cess Committee and of the Local Self-Government scheme, which was brought to maturity some 50 years afterwards." The amount raised was between Rs. 7,000 and Rs 8,000, and work was begun in 1838, the Magistrate appointing "Pooran Babu, zamindār of Mukhalpore, Chaker Ram Singh of Dharampore, and Roy Radhagobinda Singh of Hatisshala, to superintend this great public work, to see that the money of the subscribers is well laid out, and to settle all disputes which may arise regarding land."

Outside municipal areas the management of the public roads Modern
roads. rests with the District Board, which provides the funds for their maintenance except in the case of two Provincial roads which are maintained from the Provincial Fund under the supervision of the Engineer of the District Board. These Provincial roads are (1) the new Grand Trunk Road from Uttarpārā to Paltā Ghāt, 12 miles $5\frac{1}{2}$ furlongs long. Its average width is 25 feet, of which 8 feet are metalled with stone, except Provin-
cial. within urban areas, where the metalling is 12 feet wide; it crosses the Dānkuni drainage channel by a small bridge. This is an old road shown in Rennell's Atlas, slightly altered at places. (2) The old Grand Trunk Road from Paltā Ghāt, *via* Hooghly and Pānduā to Burdwan, with a length of 33 miles within this district, while 3 miles pass through the territory of French Chandernagore. It has a width of 24 feet, of which 8 feet are metalled with stone and laterite; it is carried over the Saraswati at Satgaon and the Kunti at Magrā by iron bridges. This is the old road from Ghiretti to Benares.

The District Board roads are grouped under three heads, *viz.*, District
Board
Roads. metalled, unmetalled and village roads. In 1908 the District Board had under its direct control 512 miles of road, of which

nearly 80 miles were metalled. Twenty roads were partially metalled or metalled throughout, nine being metalled throughout. Most of the latter are short in length, the principal being the Pāndua-Kalnā road (13 miles), the Uttarpārā-Kālipur road (4½ miles), and the Arāmbagh-Nayāsarai road (6 miles). The metalling is usually 8 feet wide, and consists of stone, brick *ghāna*, or both. The smaller roads are usually 10 to 14 feet wide and the larger roads 14 to 20 feet; but the width rises to 25 feet in the case of old roads like the Benares and Nagpur roads, while the metalled road from Chanditala to Janāi (1 mile 2½ furlongs) is 30 feet wide. The metalling is expensive, repairs alone costing, in 1907-08, Rs. 446 per mile as against Rs. 45 in the case of unmetalled roads.

The District Board roads converge chiefly on the through roads, such as the Grand Trunk, Old Benares and Buidwān-Midnapore roads, and on the riparian towns on the Hooghly, (which are served by the East Indian Railway), or act as feeder roads to the branch and light railways. The best roads are the Grand Trunk Road and those joining them, which, even where unmetalled, admit of wheeled traffic throughout the rains. The roads in thāna Goghat are also in good condition owing to the kankariferous soil, and cost comparatively little to keep up. These in the interior of the Sadar and Serampore subdivisions are much cut up by water channels, and, being generally unmetalled, with a surface composed of sticky earth, are hardly passable during the rains. The worst roads, however, are those lying in thānas Arāmbagh and Khānākul, which are not only intersected by numerous channels, but also exposed to the annual floods of the Dāmodar. Hence, for half the year, wheeled traffic is next to impossible; the roads are fewer in number than elsewhere; and their upkeep is more costly.

The principal District Board roads arranged according to subdivisions are as follows. In the Sadar subdivision:— (1) Chinsura to Khānpur via Dhaniākhāli, with a length of 24½ miles, of which 11½ miles are metalled, with three bridges over the Saraswati, the Kuntī and the Ghia. This is the old road of 1838. (2) Hooghly to Majnan, 18½ miles, with a bridge over the Saraswati and two bridges over the Kuntī. (3) Chaku Singh's road, from the Grand Trunk Road at Magrā to Khānpur, 21½ miles, with three bridges, of which two are built over the Kantul and the Ghia. (4) Pāndua to Kalnā via Inchurā, 13 miles, metalled throughout, with a masonry bridge, over the Behulā and a suspension bridge over the Bagul. (5) Boiochi to

Daagharā *via* Dhaniākhālī, 18½ miles, with 5 bridges. (6) Dhaniākhālī to Haripāl in Serampore, 9½ miles, of which 7 miles are metalled, with a masonry bridge over the Kānā Nadi. (7) Chandernagore to Bholā, 12 miles, with a masonry bridge on the Saraswatī. (8) Hooghly to Sātgaon, 3½ miles. (9) Pānduā to Kalyānpur, nearly 8 miles. (10) Rāmnāthpur to Harāl, 9½ miles. (11) Inchurā to Balāgarh, 6 miles. (12) Damurdā to Balāgarh, 7 miles. (13) Tribeni to Guptipārā, 16½ miles, with an iron suspension bridge at Nayāsarai. This road is a part of the old Murshidabād road *via* Inchurā. (14) Sheyā to Alāsin, *via* Malipārā, 8 miles.

In the Serampore subdivision:—(15) Baidyabāti to Tārakeswar, 21½ miles, of which 10 miles are metalled, with 5 masonry bridges, of which one is over the Kānā Dāmodar. (16) Nabagrām to Charpur, 13½ miles, with 5 masonry bridges. (17) Konnagar to Kristārāmpur, 9½ miles, with one masonry bridge. (18) Old Benares road from Devipārā to Khatul, lying partly in the Arāmbāgh subdivision, with a length of nearly 50 miles, of which only 4½ miles are metalled; it has one wooden, one brick and one light iron bridge. West of the Dāmodar, the 23rd mile is very sandy, while from the 35th to the 39th mile, the road is a mere track, being washed away every year by the Damodar floods. (19 and 20) Bhadreswar to Nasibpur, and Nasibpur to Janāi, 13 miles. (21) Dirghanga to Singur, 6½ miles, with a light iron bridge and a small arched bridge. (22) Gangadharpur to Nawāb-pur, 8½ miles. (23) Singur station to Masāt, 6½ miles, with a wooden bridge. (24) Gaja to Rājbalhāt *via* Dwarhātā, 7½ miles, with three bridges including a timber bridge over the Kānā Dāmodar and an iron bridge over the Rānāband Khāl. (25) Antpur to Sitāpur, 7½ miles, with a light iron bridge over the Khurigaohi Khāl. (26) Masāt to Dhitpur (Howrah boundary), 6 miles.

In the Arāmbāgh subdivision the principal roads are (27) Arāmbāgh to Nayāsarai (Burdwān boundary), 6 miles, metalled throughout, with two arched bridges; in the rains this is the only passable road to Burdwān. (28) Arāmbāgh to Udrājpur 7½ miles. (29) Arāmbāgh to Tetulmāri, 17 miles, with a masonry bridge; this is the old Nagpur road. (30) Pundait to Mandali (Midnapore boundary), 15½ miles. This is the old Midnapore-Burdwān road. (31) Arāmbāgh to Arandi, 6½ miles. (32) Māyāpur to Jagatpur *via* Khānākul, 16½ miles; the greater portion of this road is under water during the rains. (33) Bigdas to Bālī Hāt, 6½ miles. (34) Goghāt to Kumārganj, 7½ miles, with a timber bridge over the Baghubāti Jalla. (35) Badanganj to Subirahak, 7 miles.

Village
roads.

The village roads, which are under the Local Boards, are fair weather roads intended for communication between important villages and markets. Several of them in the Arāmbāgh and Serampore subdivisions are 5 to 8 miles in length, are provided with culverts, and have an average width of 10 to 12 feet. They are thus nearly equal in importance to the smaller District Board roads. In 1908 there were 190 village roads under the Hooghly Local Board, 75 under the Serampore Local Board and 51 under the Arāmbāgh Local Board—in all 316, with a total mileage of some 600 miles. The average cost of repairs in 1907-08 was Rs. 15 per mile.

Inspection
bungalows.

There is a circuit-house at Hooghly, formerly the residence of the Judge-Magistrate, Mr. D. C. Smyth, which was purchased by Government for Rs. 16,000 in 1856. The second storey of the Serampore subdivisional court is used as an inspection bungalow. The District Board has inspection bungalows at the following places:—in the Sadar subdivision at Inchurū, Pānduā, Magrā (attached to the post-office bungalow) and Dhaniākhālī; in the Serampore subdivision at Haripāl, Dwārhatā and Tārakeswar; in the Arāmbāgh subdivision at Arāmbāgh, Māyāpur, Parsurā, Khānakul, Kumārpukhur, Kumārganj, Syambazar, and Surul Chanmatha (a hut). The land on which the Tārakeswar inspection bungalow was built was given free of cost by the Mahant of the temple. The more important railway stations, such as Serampore, Sheorāphuli, Chandernagore, Bāndel, Pānduā, and Tārakeswar, have waiting rooms for passengers.

Convey-
ances.

Until comparatively recent times roads were few in number, except in thana Goghāt, and generally only passable after the rains. Horses were rare, being used only by Musalmāns or up-country men. Elephants were still rarer, being only occasionally brought down from Northern India by Musalmān Governors or the chief zamindārs. Most travellers went on foot, but the well-to-do used *sukhāsans*, i.e., crescent shaped litters covered with camlet or scarlet cloth, and borne on poles, to which they were attached by iron hooks; they resembled the modern *chaturdoldis*, in which brides and bridegrooms are now carried in the mofussil. They were eventually replaced by *palkis* or palanquins carried by bearers chiefly Oriyās or Bāgdīs. *Palkis* were at one time regarded as insignia of rank, e.g., in the English factory at Hooghly one palanquin was allowed for the Chief and another for the second Factor, while in subordinate factories only one palanquin was allowed, and that was reserved for the Chief. We are further told that Murshid Kuli Khān, Nawāb of Bengal, forbade the

use of *palkis* by Hindu zamindars. Bullock carts were also used by respectable people, and a description of the English Governor's procession to the English garden, 2 miles north of Hooghly, states that the members of the Council followed him in large coaches drawn by oxen. Respectable ladies were carried in palanquins or covered bullock carts. Goods were brought to the towns or markets by coolies or pack-bullocks. All these kinds of conveyances have survived to the present day, but have been supplemented, and in towns largely replaced, by the familiar *thakā gāri* and bicycle.

The river Hooghly has been from time immemorial a WATER
COMMUNI-
CATIONS. highway for the commerce of Western Bengal. The Dāmodar and Rupnārāyan are also waterways of importance, while in the rains almost all the creeks and channels are able to carry boats of at least 10 maunds burden. Hence, during these months, when most of the roads become impassable, boats are constantly in use

Of the numerous rivers and creeks (*khaḍ/s*) bounding or Rivers
and
khaḍ/s. intersecting the district, the following are the most important:— (1) the Hooghly, navigable by boats and ordinary river steamers throughout its length along the district, i.e., 50 miles; (2) the Dāmodar (25 miles), navigable by boats up to 1,000 maunds in the rains; (3) the Rupnārāyan, navigable, from Bandar downwards to Rānīhak (6 miles), by river steamers in the rains and by boats of 20 maunds at other times of the year; (4) the Dwārakeswar and Dhalakhisor, 20 miles down to Bandar, navigable by boats of 500 maunds in the rains; (5) the Behula Khal, 15 miles, by boats of 200 maunds in the rains; (6) the Kuntī Khāl or Kāuā Nadi, 40 miles, by small boats for about 20 miles up to its junction with the Ghīā, and by large boats of 500 maunds throughout its course in the rains; (7) the Saraswatī, 22 miles, by boats of 100 maunds in the rains; (8) the Dānkuni drainage channel by boats of 20 maunds; (9) the Bally Khal, 8 miles, by boats of 10 maunds in the dry season and of 50 maunds in the rains; (10) the Mundeswari or Kaṇā Dwārakeswar, from Bandar northwards for 10 miles, by boats of 100 maunds in the rains.

The country boats now in use along the rivers and streams Country
boats. are much the same as they have been for centuries past.

Among them may be mentioned budgerows or "green boats," i.e., flat-bottomed boats with a mast and low-roofed cabin; *bhars*, or country boats of light draught, with broad, bows suitable for carrying goods, and *bhaules* or smaller *pānsis*, i.e., passenger

* *Riyazu-s-Salatīn*, translated by Maulavi Abdus Salam (1904), p. 253.

boats with a cabin. The most common boats, however, are the *dungi* and *dongā*, which have been in use from time immemorial both for fishing and for carrying passengers and goods. *Dongās* or dug-outs are scooped out from a single tree trunk—e.g., mango, *sāl* tree, cotton or palm. They have a capacity of 3 to 20 maunds, and are managed by one or two men. They may be as large as 30 feet long and $2\frac{1}{2}$ feet broad, and can carry, if necessary, more than 15 men. The *dungi* is 25 or 30 feet by 4 feet, with an arched roof of matting in the middle and a bamboo mast. It is usually managed by two men, one at the bow and the other at the stern, and its average burthen is 12 to 15 maunds. These small boats ply in the interior during the rains and for several months after the rains until the channels dry up. In times of flood temporary rafts, made of three or four plantain stems, are used for passing over streams.

European
vessels

Formerly ships, sloops and pinnaces ascended the river Hooghly as far up as Satgaon and Hooghly, and mention is also made of bigger vessels like men-of-war coming up to Hooghly and Chandernagore. As early as 1828 a line of steamers ran daily between Hooghly and Calcutta, carrying the mails and calling at Chinsura, Chandernagore, etc. At present there is a daily service of steamers, belonging to the Calcutta Steam Navigation Company, between Hatkhola Ghat, Calcutta and Kalā in Burdwan. The steamers are stern-wheelers of light draught, and carry passengers and smaller goods. They leave on week-days, touching at Uttarpara, Serampore, Sheoraphuli, Bhadreswar, Chandernagore, Chinsura, Hooghly, Bānsberia, Tribeni, Sije, Jiroi, Sripur, Somrā and Guptiparā on the west bank. This line is a convenient one for passengers for Tribeni and places further up, as they are situated at some distance from the East Indian Railway, which from Magra junction diverges away from the river. On Sundays a steamer of the same company leaves Mir Bahar Ghāt (Calcutta) direct for Hooghly, starting at noon and returning before dusk. Another line of steamers runs from the Armenian Ghāt (Calcutta) to Rānichak in the Midnapore district, opposite the point where the boundaries of the Hooghly and Howrah districts meet. This is the most convenient way of reaching Khānākul and Krishnagar. During the summer and the latter part of winter, these steamers stop at Teyālis Ghāt, a mile below Rānichak. In the rains small steamers go up to Ghātāl, touching at Bandar in this district.

Ferries.

There are a number of ferries across the Hooghly, most of which belong to the zamindārs and the municipalities. Two only have been made over to the District Board of Hooghly, viz.,

that at Paltā Ghāt and that at Telinipārā, of which the first is valuable, having an average rental of more than three thousand rupees. It has four country boats for passengers and two for cattle; while the second has a green boat and two ordinary country boats for passengers and cattle. On the Old Benares road there is a ferry at Parsurā across the Damodar, which plies only in the rains. Further along this road there are ferries at Balarāmpur, at Harinkhola and Sodpur, where it crosses the Muneswari, and at Haraditya on the *khāl* of the same name. The Asadkhola ferry on the Burdwan Midnapore road, though declared a public ferry, has not been farmed out, as the stream is generally fordable in all seasons. The following is a list showing municipal ferries and the proportions in which the proceeds are divided:—Hooghly Bazar and Babujanj ($\frac{1}{4}$ ths to Hooghly and $\frac{3}{4}$ ths to Naihati; Nimaitalā (half to Baidyabati and half to Government); Kanhaidiwantalā, Court and Jagannath Ghāt (half to Serampore and half to Government), and Uttarpāra (half to Uttarpāra and half to Government).

The main line of the East Indian Railway enters the district at Uttarpārā, crossing the Bally Khāl by a large iron bridge, and leaves it a little beyond Bouchi. It has a length of about 41 miles in the district and in this length there are 19 stations. There are also 2 branch lines, viz., from Sheoraphuli to Tārakeswar (22 miles) and from Bandel to Naihati (3 miles); while another large branch from Bandel to Katwā is under construction. The Bengal Provincial Railway from Tribeni to Tārakeswar, 33 miles long, is practically a feeder to the East Indian Railway line, which it crosses at Magra junction. There are also 2 small lines in the south, viz., the Howrah Shiākhālā Light Railway and the extension of the Howrah-Amṭā Light Railway from Bargāchhiā to Chāmpādanga.

The East Indian Railway line from Howrah to Hooghly was opened for passenger traffic on 15th August 1854, and was extended to Pānduā a fortnight later, and to Rāniganj in February of the following year. Among the subsequent additions to the line, the following may be mentioned —(1) The opening of a branch line to Tārakeswar, a noted place of pilgrimage. The line was constructed by private enterprise and handed over to the East Indian Railway to work on the 1st January 1885. (2) The construction of a branch line to Naihati (3 miles) on the Eastern Bengal State Railway over the Jubilee bridge at Hooghly. This great bridge, as yet the only permanent bridge over the Hooghly, has a length between abutments of 1,200 feet and is so called because it was opened by the Viceroy, Lord Dufferin, in

RAIL-
WAYS.

East
Indian
Railway.

the Jubilee year, 1887. (3) The construction of the Hooghly-Katwa branch, 65 miles long, which is now in progress.

**Bengal
Provincial
Railway**

The Bengal Provincial Railway line, on the 2 feet 6 inches gauge, was built by a company formed through the exertions of Mr. A. L. Roy: The first section from Tarakeswar to Basuā (12·5 miles) was opened to traffic in 1894, the second section from Basuā to Magra (18·12 miles) in 1895, and the third section from Magra to Tribeni (21·5 miles) in 1904. This railway line is financed and managed by Indians. There are altogether 16 stations on it, and through communication with Calcutta is afforded by a jetty with a gangway at Tribeni, which connects the line with the steamers of the Calcutta Steam Navigation Company. The working of the line is carried on under the Bengal Tramways Act of 1883 and is governed by two contracts, one relating to the main line concluded with the District Board of Hooghly in 1890, and the other concluded with the Secretary of State for India in 1904, by which a free grant of land was given for the Tribeni extension under certain conditions.

**Light
railways.**

The Howrah-Shuakhala and a branch of the Howrah-Amtā light railways traverse thanas Chanditala and Kristanagar in the Serampore subdivision. Both are on the 2 feet gauge and start from Howrah. The line to Shuakhala is 19 miles long, of which more than 10 miles are in this district, there is also a branch line with a length of 3 miles from Japai to Chanditala. This line was opened up to Chanditala in August 1897, and up to Shiakhala in November of the same year. The Hooghly District Board has given the company the use of its roads for the line and guaranteed interest of 4 per cent. on the capital; in return for these concessions it receives half the net profits above 4 per cent. On the Howrah-Amtā line there is a branch from Bargachhia station to Champadāngā on the Damodar, which was opened in 1908. Both these light railways are under the management of Messrs. Martin and Company.

**Post
offices.**

In 1907-08 there were in this district 341½ miles of postal communication and 105 post offices, or one post office for every 11 miles. The number of postal articles delivered was 3,532,724, viz., 2,093,260 post cards, 1,136,018 letters, 118,872 packets, 169,338 newspapers and 15,236 parcels. The value of money orders issued was Rs. 14,66,885 and nearly equalled that of money orders paid, viz., Rs. 15,62,320, and there were 15,785 Savings Bank accounts deposits, the amount deposited being Rs 11,33,340.

**TELE-
GRAPH
OFFICES.**

In the first quarter of the 19th century an experimental semaphore telegraph system was tried between Calcutta and Chunnār. The experiment proved a failure and was abandoned.

before 1830, in which year some of the semaphore towers were utilized for the Trigonometrical Survey of India. In this district five of them still survive, situated at Nālikul, Dilakhas, Hyātpur, Mobārakpur and Navāsān. In 1907-08, besides the general telegraph office at Serampore, there were five postal telegraph offices, viz., at Chinsura, Hooghly, Magrā, Chandernagore and Tārakeswar, which issued 6,867 messages.

CHAPTER XIII.

LAND REVENUE ADMINISTRATION.

REVENUE
HISTORY

THERE is no detailed record of the Hindu system of land revenue administration in Bengal, and a sketch of it can only be given by piecing together the fragmentary information which may be gathered from inscriptions and written works such as the *Dharma-sūtras*. It would appear that the *grām* or village was the unit of administration, and that excluding waste or uncultivable lands and lands occupied by houses or set apart for village commons, the village lands fell into two groups, *vis.*, those which paid rent, and those which did not. The latter included *brahmottar* or land granted to Brāhmins, *debottar* or land dedicated to the gods and their worship, and *chākrān* or service lands. Among service lands may be enumerated those held by village servants, such as barbers, washermen, carpenters, smiths, etc., besides watchmen and accountants, whose duties to the community were directly connected with the land and its crops.

(The headman of the village, who was called *nandal*), had also a share in the village land by virtue of his office. He collected the rents due from the villagers, the amount of which varied according to the caste or position of the tenants, being less, for instance, in the case of Brāhmins and other high castes than in the case of the low castes; it also varied according to the nature of the produce of the fields, those growing special crops being assessed to a higher rental. The usual share reserved for the king was one-sixth, rising to one-fourth or even one-third in special instances; the village servants also received small shares of the produce at the time of reaping or threshing.

The villages were grouped into *vishayas*; *vishayas* into *mandulas* or circles; and *mandalas* into *bhaktis* or provinces, which had occasionally smaller divisions known as *bhāgas* or sub-provinces. Each of these groups was placed under a head called, respectively, *vishayi*, *mandalika* or *mukha-mandalikā*, and *Rāja* or governor. These officers collected the revenue from their subordinates and sent it on to the king's treasury, probably

after deducting a commission. They were evidently removable at the king's pleasure, but the post in course of time became hereditary in many families.

The early Muhammadan rulers were Khalij, i.e., Turks, whose object it was to get as much out of the country as they could. They cared little for any organized system of collecting its revenues, and the accounts of their rule point to irregular exactions and enforced tribute rather than to any regular assessment. By the time Tribeni with the north of Hooghly was conquered, Bengal had come under the sway of the Balbani Sultans, a somewhat more civilized set of rulers, from whose time onwards we meet with attempts at some organized system of collection. Judging from inscriptions, the country appears to have been divided into revenue divisions called *mahals* which were placed under officers known as *shikdars*. The *mahals* were grouped into tracts known as *arsahs* under *sarkashkars*, or military commanders, who had often the title of Vazir. The word *jungdar* was sometimes employed to denote a military commander in contradistinction to a *shikdar* or revenue officer, and the word *thanah* was also used, meaning a standing camp established in a newly conquered area. The details of assessment are not known; but probably the old system of collecting through village headmen was left undisturbed as far as possible.

(Far-reaching changes were introduced by Sher Sháh; and the revenue rent-roll of Todar Mal, for Bengal at least, merely recorded the new or altered system adopted during the Afghan rule. The revenue division began to be called *pargana* and *sarkar* in preference to *mahal* and *arsah*, though in the *Ain-i-Akbari* the word '*mahal*' was still used. Sher Sháh appointed in every *pargana* an *amil*, a "god-fearing" *shikdar*, a treasurer, and two *karkuns*, of whom one was to write in Persian and the other in the local vernacular. He ordered his governors to measure the lands every harvest, to fix the assessment with regard to the kind of grain they produced, to give one share to the cultivator and half a share to the *mukaddam* or headman. In every *pargana* there was also a *kánungo*, from whom was ascertained the present, past and probable future state of the crops and revenue. In every *sarkar* he appointed a chief *shikdar* and a chief *munsif* to watch the conduct of the *amils* and of the people, to see that the *amils* did not oppress or injure the people or embezzle the king's revenue, and also to settle disputes between *amils* regarding the boundaries of *parganas*. It is said that the king changed the *amils* every year or second year to prevent their oppressing the people or embezzling the revenue.

(According to the *Ain-i-Akbari*, the people in Bengal were submissive and paid their rents duly.) The demands of each year were paid by instalments in eight months, the ryots themselves bringing mohurs and rupees to the place appointed for the receipt of revenue. The harvests were abundant; measurement was not insisted upon; and the revenue demands were determined by an estimate of the crops—a custom confirmed by the Emperor Akbar—so that an actual division of grain between the Government and the ryots was not usual.

The details of *mahals* given in the *Ain* show that the districts of Hooghly and Howrah were comprised in three *sarkars*, viz., Sulaimānābād, Sātgaon and Madāran. The original *sarkars* were evidently Sātgaon on the east and Madāran on the west; but during the Afghān rule a number of *mahals* were taken from both and grouped into a new *sarkār*, named after the Sultān Sulaimān Karārāni, which cut through the middle of Sātgaon. Roughly, the two districts as now constituted appear to account for a third of the three *sarkars*, whose total revenue, including customs, amounted to 43,758,088 *dams* or Rs. 10,93,952. The landlords belonged to various castes, and besides paying revenue had to furnish a force of 300 cavalry and 18,000 infantry. In addition to the zamindārs, there were holders of *akta* or *jāgīr* lands, of which small allotments were scattered throughout the *sarkars*.

The *Asl Tumar Jamā* of Todar Māl remained in force till the second viceroyalty of Prince Shāh Shuja (1648 A.D.). That prince revised the settlement chiefly by adding the revenue of new territory in the north-east, of the Sunderbans in the south, and of Midnapore and Balasore, which had been detached from Orissa. Some increase of revenue was also obtained by a new *hustabud* valuation of old *sarkars*, amounting to more than a seventh of the former assessment. No change was made in the revenue divisions or in the other arrangements for collections. By 1722 a third revision was carried out by Nawāb Jafar Khān *alias* Murshid Kuli Khān, which was known as *Jamā Kamīl Tumārī*. The fiscal divisions were re-grouped into 13 *chaklās* or large circles, while the number of *paṣṣanas* was increased by subdividing them. The Hooghly and Howrah districts fell under two *chaklās*, the riparian strip under *chaklā* Hooghly or Sātgaon, and the remainder under *chaklā* Burdwan, these two *chaklās* being assessed to a revenue of Rs. 37,83,815. That amount was increased, however, by more than one-fourth by means of annual *Asṣṭabud* accounts and resumptions of *jāgīr* lands. During Jafar Khān's rule, the zamindārs were formally recognized as regular

landholders and held personally responsible for the land revenue of their estates

(In 1728 Murshid Kuli Khān's successor, Nawāb Shujā-ud-din carried out a fresh settlement, known as the *Jamā Tumārī Tashkash*. The *khāṣa* lands were now divided into larger and smaller zamindaris, the present districts of Hooghly and Howrah being comprised in the larger zamindāri of Burdwān (revenue Rs. 20,47,506), and in the *mazluri* or smaller zamindāris of Mandalghāt (Rs. 1,46,261), Arsā (Rs. 1,25,351) and Muhammad Aminpur (Rs. 1,40,046). These zamindāris did not include the small *jāgirs*, chiefly *madadmāsh* or subsistence lands, given to religious and learned men. Besides land revenue proper, the lands were assessed to various extra cesses known as *abwāb*, of which the number and rate varied in different districts. Mr. J. Grant, the Chief Sarishtadar of Bengal, in his *Analysis of the Finances of Bengal*, enumerated no less than twelve, including one imposed by Murshid Kuli Khan, four imposed in the time of Shuja-ud-din, three in the time of Ali Vardi Khān, and four more by Mir Kasim Ali. These *abwābs*, fluctuating in demand and gradually increasing in amount, were highly oppressive both to the ryots and the zamindars, and could only be realized with a great deal of trouble.

After the establishment of British rule a new system was gradually introduced. By the treaty of 1760 A.D. (confirmed by *sanads*) Mir Kasim Ali ceded to the British the Bengal zamindāris of Burdwān, Calcutta and Chittagong, besides Midnapore (then in Orissa). The zamindari of Burdwān included the present districts of Hooghly and Howrah, except a small strip on the west bank of the Hooghly river which formed part of the zamindāri *kismat* of Muhammad Aminpur. This strip, with the rest of Bengal, finally came under British administration with the grant of the Diwāni in August 1765. At first the collections in the Burdwān zamindāri lands were supervised by covenanted servants of the Company, but this system proved a failure, for after defraying the expenses of reducing the refractory Rājā, the collections amounted in the first year (1760) to only Rs. 5,23,691 or one-fifth of the demand, and they were also small in the second year. In 1762 the zamindāri was let out by public auction to temporary farmers for three years. The latter failed to discharge their agreements, and, to help them, an impost of 9 annas per *bighā* was levied on all the *bāze samīn* lands or revenue-free alienations. This impost could only be partially realized,* and not unnaturally made Mr. Johnstone, the Superintendent, thoroughly unpopular.

(In 1765 Mr. Verelst was appointed Supervisor of Burdwan. He restored the old system of managing the revenue, and gradually improved the *hastabud* collections,) until in 1770 the receipts amounted to Rs 47,18,918, and the charges to Rs. 6,61,486, leaving a net income of Rs. 40,57,432. The famine of that year caused a considerable diminution in both the demand and the collections, which continued for several years. In 1783 the gross demand was Rs. 43,58 026, the net demand being Rs 37,35,755, but the collections were only Rs 36,96,825, including arrears. As regards Muhammad Aminpur, the revenue (with *abwab*s) amounted to Rs 3,38,560 in 1765, the year of the grant of the Diwani, but by 1783 had fallen to Rs 2,55,113. How heavy the *abwab*s were may be realized from the fact that in the latter zamindari they aggregated, in 1765, Rs 1,34,425 on a total revenue of Rs 2,06,325, or no less than 65 per cent.; while in the Burdwan zamindari they amounted in 1760 to Rs. 8,49,099, or nearly 38 per cent of the revenue demand (Rs. 22,51,306).

(In 1784 Pitt's India Act ordered an enquiry into the complaints of dispossessed zamindars, and directed the Company to take steps forthwith "for settling and establishing, upon principles of moderation and justice, according to the laws and constitution of India, the permanent rules by which their respective tributes, rents, and services shall be in future rendered and paid." In 1786 the Court of Directors sent a despatch on the system of transacting business with the zamindars and other landholders.) It assumed that sufficient information had been collected during the 21 years which had elapsed since the grant of the Diwani to enable a permanent assessment of land revenue to be made. It, therefore, ordered that an assessment should be promptly fixed for ten years and that, if it proved satisfactory, it should be declared permanent at the end of that period. In the same year Lord Cornwallis was sent out as Governor-General with instructions to carry out the Directors' orders. On his arrival, however, he found that the information available was insufficient for the purpose. He therefore continued the annual settlements then in vogue and instituted further enquiries. These enquiries disclosed three facts. "First, that the Muhammadan revenue system of a fixed rate, varied and increased by cesses, the system which the Company was appointed to administer by the Imperial grant of 1765, had broken down, and no longer afforded protection to the cultivators. Its breakdown had been due partly to the accumulated weight of its own exactions, and partly to the altered economic relations of land to labour, resulting from the

depletion of the population by the famine of 1769-70. *Second*, that the record of customary rates had ceased to be a protection to the resident cultivators, and that the village registers had become to them a record of crushing obligations rather than a record-of-rights. *Third*, that the people had themselves made a movement to readjust rents to the altered economic conditions, by developing a body of non-resident cultivators or temporary tenants, whose presence in almost every village tended to reduce customary rates to the standard of supply and demand, and whose status had by 1787 legitimized itself."

These enquiries led to the Permanent Settlement of 1793, by which the assessment of land revenue was fixed in perpetuity.) As regards the distribution of the assessment, Sir John Shore estimated that the British Government received 45 per cent. of the gross produce, the zamindār and his under-renters 15 per cent. and the cultivator 40 per cent.† As regards the persons with whom the assessment was made, the Government got rid of all complexities, whether of origin, status or title, by establishing a uniform tenure for all zamindārs; and, in addition to old allowances, made over to them in perpetuity whatever increment might be obtained either from the improvement of their estates or from the reclamation of waste land. As regards the cultivators, it was intended to protect them from enhancement of rents and exaction of cesses by giving them a statutory right to *patta* stating the quantity of land held by them and the sum liable to be paid for it.

At first, the Permanent Settlement proved disastrous to the landholders who, one after another, broke down under the strain of having to pay their revenue punctually and in full. "Among the defaulters were some of the oldest and most respectable families in the country. Such were the Rajas of Nadiā, Rājshāhi, Bishnupur, Kūsiyora and others, the dismemberment of whose estates, at the end of each succeeding year, threatened them with poverty and ruin, and in some instances presented difficulties to the revenue officers in their endeavour to preserve undiminished the amount of the public assessment"‡. In this district the Rājā of Burdwān escaped the ruin which fell on other zamindārs by leasing out his estates in perpetuity to middlemen. Such a divestment of responsibility was diametrically opposed to the purposes for which the Permanent Settlement had been framed, and to the declared expectation of its framers that the landholders would

* *Bengal M.S. Records*, Hunter, Introduction, Ch. III, p. 65.

† *Minute of Mr. Shore*, 8th December 1789, para. Fifth Report 5, *Madras Reprint* (1888) pp. 599-600.

‡ *Fifth Report of the Select Committee*, *Madras Reprint*, p. 71.

devote themselves to improving the condition of the husbandmen. Nevertheless, it was generally discovered that this system formed the only means of escape from ruin for the old families of Bengal, who, encumbered with the costly paraphernalia of petty courts and military retainers, could not suddenly transform themselves into punctual rent-collectors and revenue-payers. By Regulation VIII of 1819 this *patni* system of subinfeudation was placed on a legislative basis. The Government also armed the landholders with new powers against the tenants; for example, the power to seize a tenant's person was granted them by the *Haftum* Regulation (VII of 1799), and the power to distrain a tenant's property by the *Panjam* Regulation (V of 1812). But these powers came too late to save the old zamindars, whose estates were sold up or who were reduced, like the Raja of Burdwan, to the position of annuitants receiving every year the fixed sums due from *patnidars*.

☞ The Permanent Settlement also failed to protect the cultivators. It endeavoured to substitute for the village record-of-rights a new system of declaratory leases (*pattas*); the system of *kánungos* was abolished, and the *patwāris* became practically the zamindars' servants. The result was that the practice of giving *pattas* could not be enforced by the Collectors, who had little time and less information; while the *patwāris*' village registers ceased to exist or were instruments in the hands of the zamindars for the coercion of their tenants. As early as 1819 the Court of Directors drew the attention of the Government "to the state of insecurity and oppression in which the great mass of cultivators are placed;" but it was not till after forty years further correspondence and enquiry that the customary rights of the cultivators were legally recognized by a series of agrarian laws beginning with Act X of 1859.

LAND TENURES

☞ The various forms of land tenure found in Hooghly are for the most part the same as in the neighbouring districts and a detailed description of them is not required, practically the only peculiar tenures being the service tenures held by *phanridars*.

Estates.

The number of revenue-paying estates borne on the revenue-roll of Hooghly (which for this purpose includes Howrah) was 4,309 in 1907-08; while the number of revenue-free estates assessed to cesses was 536. Of the revenue-paying estates, 3,973 are permanently-settled, while 101 are temporarily-settled and 235 are held direct under Government. Among the estates last named, the most interesting are the Chinsura and Serampore Khās Mahāla, which passed to the British from the Dutch and Danes, respectively. Among other estates, mention may be made of the